The Journal of the American Medical Association

VOL. XVIII. CHICAGO, JUNE 11, 1892. No. 24.

ADDRESSES.

THE PRESIDENT'S ADDRESS—EVOLUTION OF MEDICINE.

Delivered at the Forty-third Annual Meeting of the American Medical Association, at Detroit, Mich., June 7, 1892.

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History repeats itself. Generations come and go and the problems of life are outlined from age to age in the same general way, since the underlying factors must ever remain unchanged. Each individual life modifies in a degree, both in character and quality, the sum total of human existence, and the kaleidoscopic pattern of the present offers new problems, and intensifies the interest in each succeeding year. The wise student profits by the history of the past and draws inspiration from its pages, as he confronts the present and with earnest endeavor shapes the future.

In this spirit we convene to-day from every part of our great continent, and devote our entire session to the consideration of the fundamental questions of life.

In the egotism of the present, we often underestimate the wisdom of those who have labored before us, and in our generation this has been especially true in medicine. When we recount the victories won and the enormous strides in scientific attainment within the last two decades, we may well be proud, but we must remember that a more careful study of the lives and labors of the really great of every age reveals a just comprehension of much that we claim as modern, and perhaps as our own individual discovery.

The American Medical Association holds a position among the great medical societies of the world in many ways unlike that of any other. Born of a felt want among the members of a profession widely scattered, in a comparatively new and imperfectly developed country, it struggled along in the weakness of its infancy, conquering the disadvantages of great distances, compassed by comparatively slow, tedious, and expensive means of travel.

In no profession is it perhaps more true that the physician, in the large share, is the representative citizen, and no matter how devoted he may be to his profession, he ever manifests a deep and earnest interest in the body politic, of which he is an integral part.

Under the stimulus of the civilizing and developing forces of the present, the activities of life are intensified as never before, and wherever the American citizen determines his residence, he immediately looks about him to ascertain in what way he can become an active, formative factor, and paints with roseate tint the horizon of the future, in the confident belief that the new settlement is soon to be the town, the town the city, until the broad acres of unproductive pasture are mentally divided into corner lots and, by some mysterious, unknown influence, populated by the leaders in the great subdivided interests of the world of trade.

In close touch with the magnetic, electric influence of modern thought, it would, indeed, be the exception if the devotee of our art did not thus at once hold himself a co-worker upon terms of equality with his medical brother, no matter how favorably situated in the great centers of an older civilization and development. Indeed, he sometimes feels, and with reason, that there come to him advantages in his new surroundings which cannot pertain to the older conservative centers of thought and training. Why should not this be true? Less closely allied to the dead past, closely in touch and sympathy with the burning ambition of the enthusiastic spirit of the living present, no problem seems to him impossible of solution, since the press keeps him in touch with the world, and for him modern science shall work out greater marvels than the miracles of Sacred Writ.

The early founders of this Association planted better than they knew, although he whom we shall always be glad to style the father of the American Medical Association, Dr. Nathan S. Davis, may well be called the seer and prophet of our profession. I voice with you a common sentiment—may he long be spared to wield, as from the first, his dominating influence in this great National Organization.

It was wisely enacted that our Association consist, in large degree, of delegated membership, since this makes it, as by no other plan, a representative body, and, as such, it is not too much for us to claim that we stand as the exponent of the medical thought and progress of our noble profession, represented in the United States alone by a membership of nearly one hundred thousand workers.

Modelled in a considerable degree upon the constitutional principles of our popular Government, we are supposed to recognize the wants and necessities, and, from year to year, to be able to outline and, in a measure, formulate the ever-changing needs and requirements of the public welfare.

Such an organization must have its own inherent law, styled "Our Code of Ethics." While you and I accept it as simple, sufficient, only determining in a very general way what constitutes the proper relationship of the members of a great profession to each other and to the body politic, it has been for many years, and is likely to continue, a question of discussion upon which there is a difference of opinion among honest and able men. The laity refuse to accept this as any other than a stupendous joke, with the criticism, "When doctors disagree, who shall determine?" and regard the differences between the

so-called schools of medicine quite in the light of the denominational lines in the Christian church. A closer, dispassionate view, however, clearly shows that the differentiation must be made alone between ignorance and knowledge, since it is only fair to grant that considerable classes of men, devoted to a common calling, must be adjudged alike honest, and that their own selfish interest, in the attainment of success in any given profession, must be determined by the adaptation of what they consider the best means to a given end. Judged from this standpoint, the question has no parallel in the world of theological belief, since the medical scientist is dealing with objective factors, now certainly in sufficient number largely to eliminate the unknown quantities in the earlier problems presented by disease. Formulated as axiomatic in its written law, the profession for centuries has welcomed every addition of fact by which mankind may be less the sufferer from disease. But the warping of the judgment by conservatism and prejudice has oftentimes in medicine, as in the allied professions, retarded rather than encouraged independent original observation and research.

Judged in the light of our present knowledge, it certainly does not require prophetic vision to determine the lines of our future professional progress, since they must be based only upon scientific data. Such development, in no uncertain tone, means the abolition of *ism* and *pathy*, and there will be introduced in their stead, a more or less accurate interpretation of scientific laws, as to what constitutes the treatment of disease, of which year by year, there is the constantly increasing demonstration that the mere administration of drugs, no matter how valuable, is the least important part.

The evolution of thought, first applied in a given narrow direction by the founder of the so-called Homœopathic School of medicine is an admirable illustration of modern progress. Born in a measure as a protest to indiscriminate heroic dosing with powerful drugs, based upon a wild theoretic fancy, it owes its present existence largely to two factors. The first and by far most important, an unreasoning prejudice in the minds of a narrow conservative medical leadership, which by a kind of dogmatic ostracism persistently scouted the whole scheme as too preposterous for serious consideration, and hence aroused the active sympathy of the public for an ostracised minority, "as for the under dog in the fight," the critics themselves forgetting that in all diseased processes, nature is the physician's best ally, and that the sick do often recover without essential medication. The second, a wise appreciation of the advantages obtained by public sympathy and the determination to make the most from a haughty supercilious assumption of superiority by their critics. Under a competent leadership, from a handful of disappointed unsuccessful men, there has developed the most popular Homœopathic school of medicine, with a four years' graded course of instruction with restrictive critical examinations in all the fundamental branches of medical science, until the Homœopathic part is reduced to a mere addendum to the section of materia medica, almost as attenuated as the dilutions which, at its inception, it recommended to the credulity of its followers, a shadow of a name, a trade-mark in medicine.

A free government has its faults, its weaknesses. Under the fear that the individual right of the independent citizen will be interfered with by restrictive legislation as to who shall be considered competent to administer to the wants of a suffering public, laws regulating the practice of medicine, long recognized as necessitous in the great European governments, have slowly been enacted in most of the States of the Union. When under State or General Government law, it shall be determined upon examination that men have been competently trained in the knowledge of the chief branches of medicine, few of the five per cent. contingent, calling themselves Homœopaths will be content to remain so denominated, while the great body politic of our profession should institute measures to make it easy for such men properly educated to enlist in the grand army of workers devoted to unbiased investigation and the practice of scientific medicine.

"The blood of the martyrs is the seed of the church," the opposition even to a wrong is oftentimes the method by which it is developed into a monstrous evil. Note the different course of treatment which this *ism* received in Europe. The great Universities opened their doors to a willing demonstration of its real value and challenged the proof of its superiority in the treatment of disease in its general hospitals. The chairs of its professorships are vacant, and he who would learn of the development of the new art must come to the modern Athens of America, where the corner-stone of its temple was laid in the chambers of our Superior Courts of Justice by our own profession, who thus thought to destroy by legal enactment that which alone could feed on opposition.

As the indirect outgrowth of sectarian medicine and its influence upon the profession, in a general way, we have the anomaly of the New York State Medical Society, for so many years the supporter of this Association and foremost in its councils. Under the leadership of men who openly declared that the future progress of our profession demanded the abandonment of restrictive rules of polity, the very State Society from which the National Association emanated has withdrawn from affiliation with the general association upon the plea of restrictive and burdensome regulations, limiting official consultations to be held only with physicians properly educated. In order that the American Medical Association might be free from any possible criticism of a narrow or illiberal spirit, the following resolution was unanimously adopted at its annual meeting in 1885:

"Resolved, That clause 1, of article IV, in the National Code of Ethics is not to be interpreted as excluding from professional fellowship, on the ground of differences in doctrine or belief, those who in other respects are entitled to be members of the regular medical profession. Neither is there any article or clause of the said 'Code of Ethics' that interferes with the exercise of the most perfect liberty of individual opinion and practice."

We cannot question that this is in the true spirit of liberalism, and it should be accepted by the most radical expounder of the theory of evolution in medical ethics. During the present year, I have made most careful study of the question in its various aspects, especially as pertaining to New York City, and without exception I have heard only universal deprecation of the present society relationships of the profession, coupled with the pronounced opinion that the times were ripe for early re-adjustment and restoration of harmony. It had been my confident be-

lief that this year would have seen this much desired state of affairs consummated, and to have had in any degree an active part in the bringing about this result would have been considered by myself the greatest honor pertaining to the high office to which you have elected me. I can only advise moderation in your councils, believing that at a very early date, harmony will be restored, and the medical leaders of our great commercial center, almost of necessity the most influential teachers of our country, will be without exception in active co-operation with the National Association. However, the evil which we deprecate has had a resultant good in the formation of the New York State Medical Association composed in large share of active workers in this organization, and which has adopted as a part of its organic law that, "the Code of Ethics of the American Medical Association shall be the Code of Ethics of this Association and shall form an integral part of their By-Laws." This large body of active workers in our profession have already established a permanent society home in New York City, with a large medical library, and a beautiful hall for the accommodation of its meetings. The eighth annual volume of its transactions has recently been published, containing nearly seven hundred pages, consisting of many valuable contributions upon original investigations and research. The society has upon its roll of membership, seven hundred and forty names. In a free discussion upon the subject with its leaders, as with those of the New York State Medical Society, I did not find a single individual who did not deprecate the existing division in the profession, and who would not welcome any honorable means by which reunion could be effected. The rivalry of the society interests has stimulated both to the increase of scientific research, until the fruitage of each is greater than that of the society before its division.

The Relation of the American Medical Association to the General Profession in America.—There has arisen, even among the warm supporters of the American Medical Association, the inquiry if the larger service of the organization to the profession at large had not been accomplished, coupled with the criticisms: that our country is far too great, and extending over too much area for any one central body; that the development of our art has grown beyond the possibility of personal compass; that this is the age of specialism; and that the evolution of the medicine of the future must of necessity be in the hands of the special societies devoted to the perfecting of certain lines of investigation.

In the recognition of a common want, there have been formed National Societies, limited in membership, covering all the special branches of medicine and surgery. Under the leadership of a few master spirits, it has been thought quite sufficient to bring these special societies together at repeated intervals under the attractive title of "The American Congress of Physicians and Surgeons." All this personally meets my approval, when we consider the stimulating and refining influences of men meeting together bound by the common tie of special study and research. In the fruitage of such union of labor, the profession may well rejoice, but I cannot help thinking that such an argument is founded on a false conception of our profession and its duties and relation to our life work; since, regardless of the specialistic development to which we may subsequently attain, we must all begin upon a common level and master with greater or less fidelity and patience, the fundamental branches of medicine, and he who does this well and perfects himself most broadly and deeply in a general way, in practice as well as theory, finds himself subsequently the better fitted for specialistic labor. In the general field of medicine the great rank and file of the profession must continue to work, and as the Representative Body of this vast army of workers, the American Medical Association, without fear or favor, must continue to be its exponent. Here, as upon a common altar, the most obscure may bring his offering, and find inspiration which will help him subsequently to develop into a leader in some one of the many fields of specialistic research and contribute to the resources of his profession in such a way that we gladly entwine about his brow the laurels of immortality. The names of nearly all the great leaders of the American medical profession are engraved upon our own escutcheon, and he who recalls such men as Sims, Gross, Flint, Storer, Bowditch, Campbell, Richardson, Sayre, Davis, and a host of others, both dead and yet living, regards with a commendable pride the relationship and power which these illustrious formative leaders have had in this great National Association.

Let there be no jealousy aroused between the National Societies of our country. The field is large, the work is ample, and many there be who are thoroughly competent to labor in their respective departments, and yet remain foremost in State and National Organizations. The American Medical Association has its own peculiar and legitimate field of work; at touch with the great body politic which it represents, it is quick to receive and to reflect the latest and the best from whatsoever source it may emanate, and to it the entire country, for its labors in the promotion of the highest welfare of the nation in the scientific department of medicine and its allied branches, owes a debt of gratitude which it can never repay.

Relation of the Association to the State Societies.—It has been my good fortune during the present year to attend several of the annual meetings of the State Medical Societies, and note the earnest work which is being locally accomplished. Although everywhere the privilege for associate labor in the National organization is recognized, the interest which the respective State Societies manifest, in this direction, is lacking in a general way, and very few comparatively of their members, especially from the Eastern States, attend our meetings. The State Societies were intended to be, in fact, branches of the National Organization, and as such each should work together in harmony for the good of all. A unification of the State Medical Societies as integral parts of the American Medical Association would go far toward making easy the solution of many questions by concert of action, and I would respectfully suggest that measures be at once instituted for the development of a much closer relationship between the State and National Societies, and that the request be made to every State Society that the dates of their annual meetings shall be arranged so as not to conflict with that of the National Association. I have long deprecated this in my own State, where the annual meeting of the Massachusetts Medical Society occurs in June, the same week in which the Association convenes.

It would be well also, if it is within the limit of

our power, to stimulate the State Societies to a more general active coöperation within their own boundaries, and I refer, as an illustration of this, to the Massachusetts Medical Society, with a present membership of over seventeen hundred, who devote two days to the annual meeting and close with a grand banquet, at which more than one-half of its entire membership are in attendance. In this way much could be accomplished in increasing and strengthening the influence and power of the medical profession and making its opinions felt in an ever-widening influence in our national polity.

Journal of the Association.—The Journal of our Association has already advanced to a position of influence, second to that of no other medical publication in America. With a circulation of over six thousand copies it is now a source of independent income. Under a wise leadership and editorial management it has steadily improved and gives promise of a much greater development. It should be a weekly interchange of thought and the distribution of the latest and best, at a very early future, to a membership of three or four times its present number, an ever increasing bond of union between our members, with whom it should be the pride, as it is at present within our power, to make it the leading journal of the world.

Our Annual Meetings.—The best disposition of the limited time at our disposal, at the annual meeting, has recently been a subject of active discussion. Much valuable time is wasted in our general sessions in the discussion of questions of minor importance. It seems to be within the nature of things, if you would arouse most earnest discussion in an American convention, to bring up some minor clause of a by-law, upon the differences of which there will be found ready champions to fritter away hours in useless debate. To this criticism our organization has often been open, but happily less at each succeeding meeting, until now the especial addresses have justly become a noteworthy feature of the latest and the best.

Section Work.—We are glad to note the persistent effort which is being made for the better development of the Section work, along the lines of which the really great good comes to the profession from our Convention; not only is this noteworthy in the large number of very valuable original communications, but equally in the discussions which they evoke. Every encouragement should be given to the still further improvement of the Sections, and I earnestly enjoin upon all our members to come to the annual meetings with the purpose of spending, as far as possible, the entire week, that we may take time for our deliberations, and, by our example, offer an earnest protest to the great American fault of *hurry*, which too oftentimes is a synonym of imperfect work. Dr. Leartus Connor, of this city, gave a vigorous address last year before the Section of Ophthalmology, in the advocacy of better work in the Sections, which should be read by every member of the Association. If in any department of learning deliberation should be encouraged, it is certainly in that of the great issues of life with which we must necessarily deal. In this connection, it is not invidious to make reference to the objects and interests of that other National body which has just closed its session in this city, the American Academy of Medicine, which we believe has acted wisely in holding its meeting in conjunction with that of our Association, the objects of which are antagonistic to none, and should receive the cordial sympathy and support of all. It has already accomplished much in elevating the standard of medicine in America, by demanding a more careful preliminary education and thorough training, and by its influence and power, it has aided largely in establishing *State Examining Boards* and having laws enacted for the protection of the people from incompetent and ignorant practitioners of medicine. In the furtherance of this work our Association, without dissent, should earnestly enlist, and demand from each individual member of our profession fitting qualifications for the discharge of the highest responsibilities in the welfare of our race; and that, so far as possible, the great body politic be instructed that their vital interests shall be protected from ignorance and imposture.

We cannot but deprecate the too frequent publishing, in the daily papers, of sensational reports of startling operations performed by men who are justly famous operators. This parading of their skill, served up with all the ghastly horrors of the imaginative reporter, may be conducive to a cheap notoriety, but it is certainly false to every sense of propriety and professional etiquette.

State Medicine.—Within the last few years State medicine has assumed an importance and magnitude never before appreciated, until it is now admitted that a very general class of interests incident to the public welfare should be relegated to men especially trained in the various departments of Sanitary Science, and it is not too much to believe, in the early future the citizen will demand of the State, as one of his inalienable rights, no matter how poor or obscure, or where located, that he shall be able to breathe an air free from infection, to live upon an uncontaminated soil, and be furnished with water ample in quantity and of a quality free from defilement.

Under the restrictive laws of such wise supervision, the infectious diseases will be curtailed, and it is to be hoped ultimately they will be stamped out of existence.

In this connection I would call your attention to the great public necessity of the revision and re-organization of the so-called *Coroner Laws* in the different States, a subject upon which, as chairman of a committee appointed for this purpose, I have for several years made annual reports *in extenso* to this Association, pointing out clearly many defects of the existing system. The different State Boards of Health feel the necessity for immediate action in the correction of this, perhaps the most defective of all our methods of securing justice, a want which the legal profession recognize as much as our own. This, as well as the question of *expert testimony* in our courts of justice, as to who shall be considered competent to discharge this important branch of public service, are subjects well worthy of your early and careful consideration.

Intemperance.—This generation, as none other, has witnessed the discussion of topics of great moral reform, prominent among which is the question of intemperance, until, under an aggressive leadership, were it possible many would abolish the very law of fermentation. It has assumed national importance, in many localities placing the distribution of intoxicating liquors under legal

control, and we now behold a political party as its outgrowth, with an active organization which would assume national supremacy. Many of our own profession are found within its ranks. This is not the place to discuss the question of temperance, or its political issues, but no class of citizens are so well qualified to instruct the public upon the uses and abuses of intoxicating liquors as the members of our own profession, and in this direction a greater responsibility rests upon the physician than upon any other citizen. I am glad to commend to your favorable support the organization of our own fraternity for the study of this subject and the best methods for its suppression. We are indebted to them for the demonstration that intemperance should not be regarded as a vice, but rather as a disease, and that appropriate measures should be instituted for its cure. Dr. T. D. Crothers, of Hartford, is a vigorous advocate of this modern view of intemperance as a disease, and shows by ample statistics that more than one-third of all who have been the inmates of asylums for the treatment of the intemperate, have remained permanently cured. "The curability of the inebriate is far more certain than that of the insane, the liberty of both is equally dangerous; one is recognized, the other is seldom restrained until he becomes a criminal. * * * The inebriate is mentally and physically sick and needs the same help as the insane, and the question of care is simply one of adequate means and remedies to reach the disease." One of the most remarkable phenomena, widespread as the human race, disseminated alike among savage and civilized, is the demand for artificial stimulation.

The maddening influences of drink and its attendant crimes have already been greatly lessened, but diminished as are the uses of the stronger alcoholic preparations, in a somewhat corresponding ratio that of the lighter wines and malt liquors have increased, while the consumption of tea and coffee has enormously outgrown that of any previous time. Men struggling under the felt power of alcohol are never without a desire to find relief, which fact has been singularly overlooked, when adjudged from the standpoint of bad habits and the intemperate zealot who would correct them. Whatever may be thought of the imposture and illusive hopes of "The Golden remedy," the hundreds of intemperate men who, in the last year, have voluntarily sought relief in it attest the fact that the victims of this great evil desire a cure, and they should legitimately turn to our profession and find under their wise administration, its mastery, as that of any other disease.

National Board of Health.—The advocacy of a National Board of Health is no new subject, in this Association. It seems but the corollary to the proposition in the organization of our governmental polity, that, if State Boards of Health have proved so efficient in the protection of the great public welfare, a National Board of Health would be equally necessitious in dealing with questions of widespread and general importance to the whole government, as also in the centralization and dissemination of valuable knowledge. It has been urged with reason, and I trust also it is soon to be carried into effect, that not only such a wisely selected Board of Commissioners should be reëstablished by the general government, but also that it should find its exponent in a specially appointed member of the Presidential Council to be known as Secretary of the Public Health. A committee was appointed by the Association last year to petition Congress for the establishment of a Department of Public Health with a chief Secretary, which will doubtless report at this meeting. In the United States such an organization is not only more necessary than that of any other country, on account of its wide-spread geographical area and population, existing under more diverse conditions, but also because the medical officers of our government in both the Army and the Navy Departments are much less in number than those of the European nations. However, great honor is to be accredited to our country from the very valuable services of the medical corps of both the Army and the Navy to which that of the Marine Hospital Service is no exception. We are deeply indebted to the American Public Health Association for the exceptional work which has been accomplished under its auspices in the advancement of sanitary science and the practical application of public hygiene. Its publications have proved a very efficient means for the dissemination of valuable knowledge.

In 1879 a National Board of Health was appointed consisting of seven members, selected by the President from civil life, and four *ex officio* representing the Army, Navy, Marine Hospital Service and the Department of Justice. For three years this National Board had an active existence, and I have yet to hear any serious criticism of the very valuable work effected under its direction. Yet under the plea of economy, appropriations were denied and little is left of this public service except a name.

Although we cannot criticise too severely the action of our government in this direction, we have little to blame except ourselves, since the public are not educated to recognize its *occult* and unseen foes and are necessarily dependent on the medical profession for the dissemination of such knowledge. During the last decade it has been demonstrated as never before, that the causation of most of the infectious diseases that sweep over the country are particulate vital organisms, which infect the individual, reproducing to a possible harvest of death. Such knowledge makes clear certain outlining of rules for precaution and prevention, upon which are based the so-called Quarantine Laws against the invasion of foreign pestilences, as cholera, yellow fever, etc. This is really a small part of the public service in the protection of the community.

A National Health Department must be necessarily in part educational, and the diseases which cause the great harvest of death in a community, as diphtheria, typhoid and scarlet fever, and consumption are pests which the public have a right to demand of the government should be held in control, and it is not too much to believe that the foreshadowings of modern science point to their ultimate extinction. No greater economy can be exercised by our people than the endowment of such a Board with every needed scientific appointment, with fully equipped laboratories for the careful study of all the sources of disease, which shall take in the surroundings of the individual and the means best adapted for his subsistence, so as to make him in the largest possible degree a healthy working member of the body politic, contributing his full share toward the public welfare.

In effect, everything dependent upon the development and continuance of a long life of the individual

should fall legitimately within the scope of inquiry.

Upon demonstration of the need, no nation is so quick to respond and utilize its advantages as our own, and the real remedy must be found, not in complaint concerning the government when compared with that of other nations, where the enlightenment of the few serves to direct the conduct of the masses, but rather in the dissemination of knowledge broadcast among our people, and if each member of our profession would avail himself of that which is already known, and instruct those with whom he comes in daily contact, in a very brief period, in answer to a popular demand, emanating from the people, educated to perceive their great need, the advance in sanitary science in the United States would surpass the wildest dream of its present most enthusiastic devotee.

The Department of Agriculture.—The department of agriculture of our general government has been most efficient in the public service and has contributed to its welfare far beyond what has generally been supposed. As a broadening of its field of labor, a bill is now pending in Congress introduced by Senator Paddock, of Nebraska, which has for its purpose the protection of the public from the adulteration of food products and drugs in the United States. It is an important subject, an effort made in the right direction, for the protection of the people from stupendous frauds and imposture, resulting in great injury to the community, oftentimes fraught with the gravest dangers to life, and it should meet with the heartiest approval and active support of our entire profession. The food products presented for sale in our markets should be reasonably safe for public consumption, as assured by government inspection. It is now demonstrated that our milk supply is often the means of dissemination of typhoid fever, and of the bacillus tuberculosis.

The diseases of our domestic animals require much more careful study, and the public necessity demands that the meat of only healthy animals should be permitted to be sold for consumption.

The wise restrictive legislation of European Governments, interdicting the sale of non-inspected meat, has been the subject of many public protests in our country, and the appeal to the necessities of our commercial interests appears to demand the inspection of all meat products for exportation. It is but just that our own citizens should be in this direction equally protected, as those of other nations, with whom we deal. Tuberculosis may be transmitted to man by the ingestion of tuberculous meat. Other diseases, as the transmission of the tape worm and trichinæ are illustrations much better known. Dr. Abbot, Secretary of the Massachusetts Board of Health, informs me that since the middle of February more than fifty cases of trichinosis infection with five deaths, have been reported in Boston. He gives it as his belief that at present a considerable proportion of the pork offered for sale in the Boston markets is infected with trichinæ.

The Massing of the People in our Cities.—The present is a generation of city builders, and in our own country our great centers of population have been intertwined within a half century with nearly 200,000 miles of iron ways, distances so vast that they can be appreciated only by comparison; more than sufficient to bind the continent from ocean to ocean by eighty great highways of rapid travel, or, if projected in a single line, quite long enough to reach the moon. This wonderful system of steam communication has in its service a great force of workmen, a moving army in time of peace, ever subject to exposure and danger. This large factor of the body politic demands of our government a special supervision to minimize, as far as possible, their perils. The ease of inter-communication has greatly increased the movements of our ever restless people, while the demands of trade alone has organized under its banners an army of three hundred thousand professional travellers. Few of us can appreciate the activities of the present age. The railway systems of the United States alone have expended in the last ten years, in their development, an average annual sum of five hundred millions of dollars. In the year of 1889, in our country alone, one religious denomination erected over four thousand new churches, an average of over eleven each day. "Put them in line on the first day of January, when the sun went across the country on the lightning limited at the rate of a thousand miles an hour, his light would have fallen on a new church roof every third second as the sunrise flashed over hill and dale."

The complex questions of city living are ever becoming more and more difficult of solution. Can a million of people be massed together, and each live better, accomplish more, suffer less, and lengthen their existence? It is given to you alone to answer the question in the affirmative.

Our Relations to the Medical Profession in Foreign Countries.—In geometric ratio with the years our influence in the great body politic of the medical world increases. That which, a generation ago, seemed like the wild chimera of a scheming brain, an International Congress of Physicians and Surgeons, has been now ten times triennially repeated, and the influence of each International Medical Congress has deepened and intensified. The day may be far distant when a universal language, now the Utopian dream of many, shall see its fulfillment, but in medicine it is an accomplished fact. No longer is its science written in the language of the few and buried in ponderous tomes for the resurrection of the coming centuries. Any discovery of real value almost at once, after its publication, is read throughout the civilized world. Wherever medicine is the better taught, there gather devoted students. In large numbers our representative youth are found in the great medical centers of learning in England, in France, in Germany; and even far-off poverty-stricken Italy is resuming again something of her former prestige and the mantles of the great masters of the sixteenth and seventeenth centuries are falling upon worthy shoulders of the sons of this present generation.

The relations of our Association with the great Societies of Europe have been in unbroken harmony until within the last two years. We have been delighted to receive from and send delegates to all the foreign Societies, and the unflagging interest and devotion of the American physician to his profession was illustrated in the enrolling of over six hundred and fifty delegates from the United States to the International Medical Congress, held in Berlin, in 1890, the largest number representing any nationality, excepting that of Germany. The great majority of these were delegates from this organization, a very

considerable number of whom were also sent as delegates to the British Medical Association, which held its annual meeting in Birmingham. Unfortunately, many of these felt themselves deeply aggrieved at a seeming neglect on the part of the local committee.

By vote at the last annual meeting, the appointment of delegates to the British Medical Association was left to the President and Secretary General, with full powers. My first act as your chief executive was the presentation of the subject to the Council of the British Medical Association; a copy of the correspondence is herewith appended. The result is all that could be asked and is embodied in the following resolution:

"*Resolved*, That the President of the Council be requested to inform Dr. Marcy that it is not proposed to deprive of any rights they may have acquired those American citizens who have been elected members of the British Medical Association, but as such elections have been found to be illegal, no more can be permitted to take place. Further, that the honorary membership of the Association is only given *honoris causa* to a few specially distinguished persons by vote at the Annual Meeting of the Association. And lastly, that the officers of this Association will always be pleased to receive and show every consideration and hospitality to all properly accredited American visitors."

The International Medical Congress to be held next year in Rome, already gives promise of renewed activity in the medical world of Europe, while energetic measures have been instituted in the Western Hemisphere for a successful meeting of the first Pan-American Congress, to be inaugurated in our own country the coming Columbian year. If our nation fulfills its apparent destiny, the early future will see no longer the necessity of our advanced pupils making European pilgrimages for original research and study in foreign languages, but the rather that our own great centers of learning will be selected as the Meccas of the best modern thought, where students of all nationalities shall gather for instruction.

The South American continent is emerging from its ruder state of semi-development and its far too long delayed civilization, and is undergoing a transformation, which promises much for the immediate future. Another century should make it the home of one hundred millions of prosperous peoples, and its vast resources should be utilized, not alone for more than fullfilling the golden dreams of its first conquerors, but the adding of untold millions to the world's wealth and resources.

Professor Virchow, in his Presidential Address before the last International Medical Congress, congratulated the Surgeons of America as, at present, representing the best attainment of surgical teaching and practice in the world. It is not too much to claim that we are now equipped to compete successfully with any of the great centers of European learning for the teaching of medicine in all its numerous branches, and few more potent measures can be advocated, for the better union of all our western interests, than the moulding of the scientific thought, in its various branches of learning, of the leaders in this coming civilization of our great Southern Continent.

But I will not weary you with further detail as to possible obligations and duties, arising from our special knowledge and our relations to the general public, of whose interests, both of health and disease, we are the acknowledged custodians. We are a profession, oftentimes belittled and decried as fattening upon the public misfortunes, from the attendance upon whose ills we derive our direct support, but the broader view of our field of labor is the prevention of the very ills we are supposed to cure. From this standpoint, no profession, not even excepting that of the clergy, has a more noble vocation. The last two decades have witnessed a revolution in the surgical art, until it is now founded upon the great principles of a sure science, and is practiced with a certitude, and with results more remarkable than the tales of Aladdin.

The battles over the best methods of modern wound treatment have oftentimes waged fiercely at the meetings of this Association, and if not "fought to the finish," have certainly won glorious victories in behalf of humanity and the establishment of scientific truth. The new demonstrations upon the causation of disease have already revolutionized the teachings of medicine and introduced a brilliant era in the practice of our art.

Sanitary science, the prevention of disease, has largely curtailed the whole class of zymotic affections, with a possible future promise of their eradication. Small-pox, which once swept as a pestilence unrestrained over continents, destroying over half of its victims, has, by the simple method of vaccination, been placed within such limits that it is practically expunged from the death roll even of our great cities.

Consumption.—The fell destroyer, consumption, is the greatest scourge of the human race, counting its victims, in the United States alone, over one hundred thousand annually. We have the clear demonstration of its cause, as a particulate morbific entity, with its life history and development now clearly established; how it enters the human organism and by its propagation and development, results in the death of the individual. The discovery is sufficient honor to one man, we might almost say to one generation, since based upon such knowledge, there must develop means for its control, if not its extirmination.

"A nation's health is a nation's wealth," a nation's happiness. The application of the principles of modern science, as already known to you, introduced into the practice of daily living, would diminish sickness and suffering one-half, and the death rate by at least one-third.

Sorrow and mourning thus lifted from the race would make the future of our existence almost Utopian and change the whole aspect of life. Remove this burden, the expense attendant upon sickness and death would be lessened to the extent of hundreds of millions of dollars annually, and the income of the race would be doubled.

Whatever those untaught in medicine may think, you and I well know that we are not giving an unbridled rein to an illusive fancy in imaginary speculation. It is a scientific demonstration, formulated in general terms, "the survival of the fittest."

Through the long lines of scientific research, dating back since man has knowledge of the introduction of life upon our planet, this law has held good. In its far reaching effect the individual of the present is no exception. Life itself may be denominated a battle for existence. The invisible vital organisms with which we are surrounded make up in numbers that which they lack in individual force. They utilize what seems the dead and decaying albuminoid products for their own development, thus separating into their ultimate elements the very

material of existence and in its changed relations fit and prepare it for new and higher uses. Thus nothing is lost, nothing is wasted, simply changed, reformed to undergo anew its part in the great drama of life. This vital principle, the factor of existence, which has not yet been given to man in the equation of life, to be represented in known terms, permeates every living individual cell, and thereby gives it a vital inherent resisting power.

Devitalize this below a certain standard, and it becomes the prey of other living forces. This, in the individual, we denominate disease. In the struggle for existence, the higher vitalized organism survives, and, when the various functions of the extremely complicated machine which we call man are working together in harmonic rhythm, we denominate it health. Such a complex machine, like every organic thing, should have its function, its little part in the world's drama, and evidently was intended to wear out through the exhaustion and decay of its own formative processes, and when applied to man means the rounding out of a long life, subject to the infinite possibilities of subsequent immortality.

The accidents to such a complex machine, the infractions of construction, we have been wont to call surgical. When, however, by the aid of a better armamentarium, we are enabled to trace the developing colonies of anthrax, until considerable portions of the circulatory system are impeded by the presence of these minute, invisible organisms, or large portions of tissue are robbed of their nutrition and become devitalized by the growth of the bacillus tuberculosis and the attendant changes, who shall declare that these too are not objective, and should, in the broader sense, be considered accidental, and never a part of normal environment? If this be true, it becomes us as a great high priesthood of the most sacred calling, veritably as Moses to an enslaved people, to point out the way of life, its dangers, and how to avoid its accidents, and to direct in the great highway of human endeavor the development and fruition of the human race; a training of the soul's pupillage for immortality. *Mens sana in corpore sano.*

We pause a moment in grateful remembrance of our honored dead. During this year our entire country has again been swept, as with a tornado, by the all-pervading epidemic from which, on account of the exposure and hardship incident to our profession, it has been especially a sufferer. Its death-dealing influence has very naturally fallen most heavily upon the aged and the infirm, although its victims have been taken unsparingly from the young and vigorous of all vocations and all professions. In no one year has our Association been called upon to mourn so large a loss of its members, among whom its distinguished presidents Dr. Campbell, of Georgia, Drs. Storer and Bowditch, of Massachusettes, and now only just added to the list Dr. Richardson, of Louisiana, have been gathered to the "great majority," each a master in his own special department of professional labor, all distinguished as teachers and authors, especially wise and skilful and famous in the public service which they so freely rendered for the welfare, not alone of their respective communities, but also for the nation.

In the ripe maturity of years each had lived the recipient, in a very large degree, of public honors and emoluments, with the happy consciousness of a just recognition, not only at the hands of a noble profession, but also of a generous public, of the faithful discharge of disinterested duties. All honor to such names; if our young men require illustrious examples of the full fruition of noble lives, well spent in earnest, unselfish labor, let me point them to the careers of our noble chieftains whose loss to-day we mourn, whose memories we honor, and whose examples we emulate.

In the many subdivisions of labor, each is naturally wont to consider his part therein as the more important. To the politician, representation with its attendant possibilities and power seems the high goal of ambition, and to its attainment he bends all his energies.

To the statesman, the adjustment of the great principles of government so that they may be conducive of the greatest good to the largest number.

To the lawyer, the principles of justice and equity as worked out in the experiences of the centuries for the harmonic relationship of individuals to and with each other.

To the clergy, the divine mandate, declared in the so-called Revealed Word, vivified in the flesh, until it permeates all mankind, and each receives and is quickened by its spirit — the evolution of the higher theology—God in us working out his grand purposes, as the foretaste of the immortality beyond. He reads it in the Revealed Word which has been transmitted through the generations, as having emanated long ago from Divinity itself. He points out to you a highway of escape from the penalties of the transgressions of Divine law.

You and I are, in no less degree or kind, a high priesthood of a no less sacred profession. We read the mandates of the Creator by no uncertain transmission of revealed word. We see them repeated and revivified in every succeeding generation. In letters of living light we read the law in no uncertain language, and we note that its transgression is irrevocable, and oftentimes means death to the organism. There is no mediatorial highway for the escape from its penalties, and no remission of its judgments under plea of ignorant infraction of its mandates. If this is true, the vital interests of the individual rest upon a better knowledge of, and obedience to its laws. In the evolution of medicine and sanitary science lie in large measure the resulting happiness and destinies of the human race. In the broader view, the differentiation of life's factors becomes difficult, and perhaps they were never intended for ultimate analysis.

In the ever-changing kaleidoscopic pattern, the individual factors of man's personality should intertwine and blend as the colors in the hand of a great master, in perfect harmonic symmetry and relationship. To you and I at least it is given to render in no uncertain tone the fiat of God's own law, unchangeable, repeated from age to age, from generation to generation. To us it is given to contribute our part to the symmetrical development of the great tripod of human existence — the mental, the moral, and the physical nature of man, upon the harmonic action of which must ever rest the destinies of the human race.

PROF. KEEN said that in cases of profound shock the best drug that can be given is sulphate of strychnine; hypodermic injection, $\frac{1}{30}$ gr. Also give brandy.

ADDRESS IN SURGERY.

At the Annual Meeting of the American Medical Association, Detroit, June, 1892.

THE GENERAL PRINCIPLES OF THE SURGERY OF THE HUMAN BRAIN AND ITS ENVELOPES.

BY JOHN B. HAMILTON, M.D., LL.D.,

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Mr. President and Gentlemen:—The duty of delivering the annual address in surgery, has this year been assigned to me, and while I deeply appreciate the honor, it was with a profound sense of the difficulties of the task, that I accepted it.

The founders of the plan of general addresses no doubt intended that each address should constitute an annual review of the whole subject assigned. But at this date, the time at the disposal of your orator will not permit it, and for the past few years the custom has been, to select some particular division of the subject as the topic for the discussion. My topic on this occasion will be: "The General Principles of the Surgery of the Human Brain and its Envelopes."

> "On earth there is nothing great but man,
> In man there is nothing great but mind."

The diseases and injuries of the seat of the soul can never be a matter of indifference to the practitioner of medicine and surgery. Mental diseases must forever occupy the highest place in pathological study, for it is obvious that the disturbance of the physical condition of those structures by and through which the phenomena of human life and intellection are manifested, is of the utmost consequence.

It has long been an axiom that there is "No wound of the head so trifling as to be despised, and few so serious as to make life despaired of." But notwithstanding this axiom, there has been throughout the ages past a quite general reliance on the *vis medicatrix naturæ*—that invariable refuge of inadequacy.

It is true that trepanning has been employed from the earliest times, and that the dura mater has been incised in many cases by the older surgeons; but the brain itself has seldom been touched.

Salvianus mentions a lunatic who by accident had the skull broken and was "excellently cured:" and another who "breaking his head with a fall from on high, was instantly recovered from his dotage." (Burton.) Gordonius recommended "the head to be shaved and bored to let out fumes, which without doubt will do much good. I saw a melancholy man wounded in the head with a sword, his brain pan broken; so long as the wound was open he was well, but when his wound was healed his dotage returned again." Guianerius cured a nobleman in Savoy by boring alone, "leaving the hole open a month together, by means of which, after two years melancholy and madness, he was delivered." (Burton.)

Celsus thus describes the operation of trepanning: "There are two ways of excising the bone. If that which is injured is very small, a *modiolus* is used, which the Greeks call '*τοινιαδα*,' if larger, the *terebra*. I will explain the mode of using each; the modiolus is a hollow round iron instrument serrated in the lowest edges; through the middle of which a pin is introduced, itself surrounded by an inner circle. But there are two kinds of terebræ (drills), one like that which carpenters use, the other of a longer little head which begins from a sharp point, afterwards becomes suddenly broader, and again proceeds to another. If the disease is within a narrow compass which the modiolus may be able to cover, that is rather fitted; if there is caries underneath (the sinus) the middle pin is introduced into the opening; if discoloration only, a small cavity to receive the pin is made with the corner of a chisel; that in place, the modiolus while turned around will not slip; afterwards it is turned by a strap as a terebra (drill) and there is method in the pressing that it may both perforate and be driven round, because if pressed tightly, it avails little, and if heavily it moves not. Nor is it unfit to drop in a little rose oil, or milk, by which it may be turned more easily, but if these (lubricants) be too abundant, they blunt the edge of the instrument. When a way has been cut by the modiolus, the middle-pin is withdrawn and it is driven by itself, afterward when the soundness of the lower part is known by the dust, the modiolus is removed. But if the disease is broader than may be covered by the modiolus, the opening must be made by the terebra. An opening is made by this (terebra) at one end of the diseased, and also at the end of the sound bone, afterwards one not far from the first, and a third, until the whole place that is to be excised may be surrounded with these holes. . . . . Then an excising chisel by a mallet, from one opening to another excises that between."

After describing minutely the depth to which the drill must go, and how to determine it, he proceeds:

"The opening being made, the middle septa are to be excised in the same manner, but much more circumspectly, lest perchance the corner of the chisel may injure the membrane until an opening be made, through which the membrane shield may be introduced, this which the Greeks call '*μηνιγγοφυλλακα*.' It is a brazen plate, strong, turned up a little, smooth on the outer part, which being introduced so that the outer part of it may be nearer the brain, occasionally is cast under that which is to be removed by the chisel, and if it receive the corner of it, suffers it not to pass beyond, and by that the surgeon strikes the chisel occasionally with the mallet, both more boldly and more safely, until the bone being excised on all sides, may be raised by the same plate, and taken away without injury to the brain. When the whole bone has been taken out, the edges are to be scraped round and to be smoothed."

Celsus followed the Hippocratic method, which for four hundred and sixty years had been practiced almost without change; and we are thus able to see that the ancients anticipated us in these operations on the bony walls of the brain; and it is a little curious to read in the surgical text books of a comparatively recent period, statements like this from Lizars (System of Practical Surgery, Edinburgh, 1847, page 220).

"The operation of trephining has been inconsiderately proposed by Professor Dudley, of the United States, as a cure for epilepsy"; and this from Edinburgh! Old John Muys, of Leyden, in his Praxis Chirurgica Rationalis, 1685, mentions with approval incision of the dura in all cases when on removing the bone disc, nothing abnormal is seen. Heliodorus, in the first century, used after trephining, horse hair drainage, and linen gauze soaked in strong vinegar, over which, linen gauze saturated with oil of rose.

Mild antiseptic applications have long been used, the juice of the thymus calamintha, and many other aromatic herbs now known to have a certain antiseptic value. The famous balsam of Fioraventi was made of spirit distilled from aromatic herbs and resin. It is well to remember that many of these aromatic herbs were known as vulnerary plants. Wiseman, in the latter part of the 17th century, used terebinthinate dressings.

Leone, of Pavia, in 1583, drained these wounds by small pieces of wood. Acrel, of Stockholm, in 1775, reported a case of motor paralysis of the legs following a cranial injury, cured by the trephine. Benjamin Bell incised the dura for subdural abscess. Dupuytren in 1830 trephined the skull, incised the dura and plunged a bistourie directly into an abscess cavity in the brain.

But however interesting from an historical point of view, to revive these lessons of the past, we must remember that as science is progressive, so the practice keeps equal step with that progress. In the past, practice was in advance of scientific knowledge. Tradition governed, instead of history and inductive reasoning. In the modern practice of the surgery of the brain, and its envelopes, we have indeed little to offer that is new in the practice, the slightest glance at medical history forbids that conclusion, but the reasons for our methods belong to us alone; and our century, although the heir of the accumulated wisdom of ages that are past, will have more to give to posterity in solid knowledge than any half dozen centuries that have preceded it, and particularly in the matter of diagnosis. We have the surgical engine operated by an electric motor, which will turn the drills and the circular saw, and this is an undoubted advance, but the principles of operating are the same now as in the Hippocratic period.

Diagnosis.—In speaking of the diagnosis of diseases and injuries of the brain, it is without any very good reason the fashion to say "cerebral localization." Why not cardiac localization? bladder localization? or hepatic localization? The truth is that when we locate, *i. e.*, determine the *locus* of a lesion, we make a diagnosis. We cannot make a correct diagnosis without determining the seat of the disease. Why then add to the obscurity of diseases of the brain by vexing literature with a new and unnecessary phrase?

The diagnosis of injuries, abscesses and tumors of the brain is more or less difficult according to the site of the injury. In some situations there are no peculiar symptoms as yet demonstrated, from which an accurate diagnosis can be made, and the history of the case and the consensus of symptoms must be relied upon. Subdural abscesses present these negative symptoms very frequently. In pistol shot wounds of the brain, for example, there is difficulty in diagnosis because the symptoms are often conflicting and perplexing. This is obvious when we reflect that wherever be the location of the ball at the time of examination, the symptoms must be those of the lesion of the entire track traversed, even more than the pressure effect of the ball itself. The diagnosis of lesions of the motor area, of the centers of articulate language, and of the sensory cortical centers, is now well defined, but the diagnosis of lesions of the central ganglia is yet in an uncertain state. The motor cortical area has been subdivided into minute areas, each governing certain movements. The use of the ophthalmoscope in cerebral surgery has come to be essential. Optic neuritis and choked disc are found in a majority of cases where tumors are present, and the size of the tumor does not seem to increase or diminish its intensity.

Dr. H. Oppenheim, in the March number of the *Neurologisches Centralblatt*, describes a symptom which he has constantly observed in affections which have their seat in the occipital fossæ. He asserts that he observed rhythmic contractions of the velum of the palate, and the vocal cords, also in the muscles supplied by the inferior branches of the facial nerve. These symptoms were associated with cephalalgia, dysphagia, vomiting, paresis, and contracture of the left facial region, without impairment of the electrical reaction. The left extremities were externally in a state of paresis and contracture, the pulse was accelerated, there was deafness, and a tendency to fall backward on closing the eyes. This was a state consecutive to an attack of epidemic cerebro-spinal meningitis. Dr. Oppenheim observed for a period of two months these rhythmic movements (contractions) of the velum of the palate and muscles of the larynx, in a patient in whom the necropsy revealed the presence of a tumor the size of a hen's egg, in the cerebellum, with flattening of the pons and medulla. Dr. Oppenheim then came to the conclusion that in cases presenting this rhythmic motion without ophthalmoscopic lesion showing the presence of a tumor, it was rendered probable that a purulent center resulting from encephalitis is present.

To determine whether abscesses of the internal ear and mastoid abscesses are emphysematous, Dr. Benj. Ward Richardson says: "In cases of vertigo associated with noises in the head, I am in the habit of auscultating the cranium over the mastoids. When the sound is associated with cardiac murmur the bruit may be traced up the carotids and heard over the mastoids. This is increased on lying down; it is increased on exertion, and when the heart is excited, as from stimulants, a sound similar to the venous hum may be heard. It is important to make such an examination before concluding that the noises are due to disease of the labyrinth." (*Glasgow Med. Jour.*, May, 1892, from *Asclepiad.*)

Abscesses.—In no department of surgery has progress been more marked than in the treatment of abscesses, the causes of which are now definitely known. With the single exception of those produced by infected emboli, abscesses are the result of direct infection, and in a majority of instances follow aural or ethmoidal disease or traumatism. Mr. A. J. Pepper, in an article (*London Lancet*, No. 10, Vol. i, 1892) on "Disease of the Temporal Bone," ranks this after strangulated hernia and appendicitis, as the most common cause of death preventable by surgery. The dangers of temporal disease are abscess in the middle fossa, thrombus of lateral sinus and ulceration of carotid artery.

In the same number of the *Lancet* there is reported a fatal case of abscess of the brain from mastoid disease. The skull was trephined by Mr. Jalland without avail. Also in the same issue there is a case recorded by Mr. Stanley Boyd, where there was trephining performed for pachymeningitis hæmorrhagica, with recovery, and a similar case by Mr. Openshaw.

Mr. Horsley reports (*London Lancet*, No. 22, Vol. ii, 1891) a case of traumatic abscess of the left an-

gular gyrus, with right hemianopsia and word blindness, treated by operation, but the case died from hernia cerebri.

M. Dandois, in a communication to the Royal Academy of Belgium, and published in *Bulletin* No. 8, for 1891, reported a case of trephining for abscess of the brain following an abscess of the left middle ear. He gave it as his opinion that whenever trephining and evacuation with cleansing of the cavity did not cure the patient, it was because the operation was not done soon enough, and while he recognized "that unfortunately there were sometimes insuperable difficulties in the way of making an early diagnosis, yet the ancient adage, *melius anceps remedium quam nullum*, held good here more truly than in any other cases." How closely this corresponds to the view recently advanced by the late Prof. Agnew, we shall see farther on.

Robin, in the *Gazette des Hôpitaux*, March 26, 1892, mentions the fact that cerebral abscesses are seldom found uncomplicated. Out of 110 cases he found only 22 without complication, and of 19 cerebellar abscesses there were only 4 uncomplicated. The fact is now acknowledged even by the most conservative, that consecutive abscesses require additional trephining. In February last, at the Presbyterian Hospital in Chicago, I operated upon an old man for mastoid abscess, removing the outer wall of the bone, and evacuating the pus. In three weeks the wound apparently healed, and having occasion to leave the city, I left the patient in the hands of Dr. Graham. Symptoms of cerebral disease with erysipelas developed in a day or two, and Dr. Graham re-opened the mastoid bone and made an extensive resection of the remaining bone, and evacuated supra dural pus. I found the patient again convalescent on my return in March, and he finally recovered completely. In all cases of ethmoidal abscess, abscess of frontal sinus, and mastoidal abscess, the further extension of the disease should be prevented by free drainage. This principle was well stated by Allis (*Annals of Surgery*, July, 1889) two years ago. He proposed drainage of ethmoidal abscesses by perforating the ethmoidal plate by a trocar thrust through the upper part of the nasal cavity and inserting a tube. I myself similarly drained the frontal sinus in a case at the Providence hospital in Washington, April 6, 1890.

Allis proposed this form of drainage in cranial injuries involving the frontal lobe, and also for injuries and abscesses in the middle fossa. To drain this fossa Allis chose "a point an inch behind and an inch and a half above the external auditory meatus. In the use of the trephine the chief difficulty will be to reach the dura without wounding the branches of the middle meningeal, which are deeply channeled in the bone in this region. The dura reached, it can easily be elevated and the finger carried along the roof of the petrous. The attachment, thickening and condition of the dura will indicate in some measure the progress of the inflammation, while the presence of recent lymph will betoken the presence and proximity of cerebral abscess. With the finger within the skull, and resting upon the petrous, the chisel or drill may be made to puncture the mastoid and the entire carious mass can be approached with the utmost confidence and precision. If cerebral abscess is present, the roof of the petrous can readily be pierced and through this the abscess drained. Should pus have found its way into the posterior cerebral fossa, following the course of the internal auditory meatus, then the tentorium must be detached and an outlet established by direct drainage."

Esmarch, in his new work *Chirurgische Technik* (Kiel und Leipsig, 1892), proposes to drain the frontal sinus into the pharynx, as affording a more easy conduit. But let us not forget that it was Chassaignac who in 1861 established the modern method of surgical drainage by rubber tubing and popularized it in practice.

Horner (*New York Medical Journal*, May 7, 1892, from *Arch. f. Ohrenheilkunde; Centralblatt f. Chir.*, 1892, No. 3) arrives at the following conclusions, after the consideration of the reports of a hundred cases of intracranial abscess due to aural disease, nine operations and ninety-one necropsies:

"1. Abscess of the cerebrum was found in sixty-two cases, of the cerebellum in thirty-two, in both at the same time in six. Children under ten years of age seldom suffer from cerebellar disease, on account of the great distance of the posterior fossa of the skull from the auditory meatus. Men are about twice as liable to abscess of the brain as women. The right side is affected more frequently than the left.

"2. Regarding the extension of the disease from the temporal bone to the brain, he concludes that contrary to the generally received opinion, in a very large portion of abscesses of the brain, which result from suppurative otitis and develop near the seat of the primary lesion, a demonstrable continuity with the same can be found. Therefore, in order to avoid later trouble after an apparently brilliant result, besides emptying the abscess, the diseased bone should be sought and removed.

"3. Abscesses of the brain dependent on disease of the petrous bone lie in the immediately neighboring portions of the brain in the temporal lobe, or in the half of the cerebellum on the same side. In seven of the hundred cases this seemed to be contradicted and Horner acknowledges it to be not proved, for to prove it, it would be necessary to have data regarding each case, showing that a disease of the temporal bone was present, which could cause abscess of the brain, that no pyæmia was present, and excluding any general tuberculosis and suppurative inflammation of the air passages.

"4. The information in regard to incapsulation and quality of the pus was deficient. In one case the odorless condition of the abscess which resulted from a fœtid otitis was mentioned.

"5. As complications, thrombosis of the venous sinus was found seventeen times on the right side, five times on the left; in the ninty-one autopsies suppurative meningitis was found seventeen times, rupture into the lateral ventricle ten times, into the fourth ventricle once. The frequency of the complications does not permit the conclusion that those abscesses were inoperable in their early stages.

"6. In regard to the diagnosis between otitic abscesses in the temporal lobe and the cerebellum, these points must be borne in mind: (1) The age; cerebral abscesses are three times as frequent as cerebellar in children under ten. (2) The seat of the primary bone lesion. (3) Labyrinth disease does not certainly indicate cerebellar abscess. (4) Location of painful area by percussion. (5) Pain, verti-

go, and optic neuritis are uncertain signs. (6) Disturbances of speech occur only in cerebral affections, but are seldom met with on account of the preponderance of right-sided abscesses."

Injuries and Intra-Cranial Hæmorrhage.—Much of the ground has now been gone over in relation to cerebral injuries, for what we most fear as a result of injury to the cranial wall is the formation of an abscess, and it is well to remember that an abscess may follow a fissure almost as readily as a fracture. The deeper parts of the skull, *i. e.*, those most remote from the surface, are most likely to become infected, either through lack of sufficient cleansing of the initial wound, or difficulty in reaching the bottom of the wound from occlusion of its track. A review of the literature of the year on this branch of the subject is, however, interesting and instructive, and it will be seen that asepsis and drainage is the strain running through it.

Dr. John Ashurst recommends that in removing spiculæ or fragments of bone, in cases of fracture of the skull, great care must be used. The fragments should not be torn away with forceps, but be carefully separated from the dura with a knife if necessary (*International Clinics*, January, 1892).

Dr. Wyeth advises that in pistol shot wounds of the brain, where the ball has passed beyond reach, as it is liable to move about, the brain substance offering but little resistance, the patient should be kept quiet long enough to allow the bullet to become encysted (*International Clinics*, October, 1891).

Dr. Walter Beusel (*New York Medical Record*, January 16, 1892) reported a case of depressed fracture (open) of skull, two inches transversely across the middle of forehead immediately above superciliary ridges. The patient was quite sensible; on the second day had great subconjunctival hæmorrhage. Dr. Beusel removed large fragments from deep lacerations of each frontal lobe. He had difficulty in controlling hæmorrhage from longitudinal sinus, but recovery was perfect. The prompt removal of the fragments and irrigation doubtless saved the life of the patient; for that there may be few immediate symptoms in these cases, is well shown by the case reported by Dr. Edmund Burroughs (*New York Medical Record*, January 9, 1892). The patient had a basilar meningitis which proved fatal after two and a half days' illness. The unfortunate man had five weeks before received a severe blow in left parietal region, but had suffered no inconvenience till the fatal attack.

Mr. Appleyard reports a case in the Bradford Infirmary of open depressed fracture of the skull with aphasia, brachial and facial paresis. He trephined the patient, who recovered. (*London Lancet*, February 15, 1892.)

Dr. Lamphear, of Kansas City, successfully operated on a case of cerebral hæmorrhage, with right hemiplegia and a complete aphasia, October 10, 1891. He believes the time will come when the surgeon will operate for bleeding beneath the arachnoid, in the cortex, and anywhere where the ruptured vessel is not within the internal capsule. (*Daniel's Texas Med. Jour.*, February, 1892.)

Mr. Page (*London Lancet*, No. 22, Vol. ii, 1891) reports a case which, contrary to the usual practice, escaped the trephine and recovered. There was a fracture of the skull in the occipital region, temporary blindness and several days' unconsciousness.

Schoenborn, of Würzburg, reported at the Congress of the German Surgical Society, April, 1892, a case of osteoplastic surgery after a fracture of the cranium in a young man of 18 years, who had a depression of the frontal bone. Two fragments of bone were necessarily removed, respectively measuring 5 and 6 centimetres long and 2 in breadth. The longitudinal sinus, which was wounded, was tamponed, after the removal of a small quantity of cerebral substance; and on account of a subdural hæmatoma the dura was incised. A cure resulted, and after six months, a secondary operation was made to fill the osseous breach in the forehead. Two flaps were made, one from each parietal bone, to consist of the scalp, the periosteum, and the external table of the skull, and the flaps were then brought to fill the chasm in the center of the forehead. The parietal wounds were immediately closed by Thiersch's method. Two months after the operation the patient left the hospital with the cranium entirely closed (*Archives Générales de Med.*, May, 1892).

Dr. Laplace, of Philadelphia, by a brilliant operation, removed clots from the base of the brain and the patient recovered. The patient was a boy of 10 years who while at play had fallen on a broken fencing foil. The steel had penetrated the left orbit between the inferior orbital ridge and the eyeball. The child became unconscious, with deepening coma, right hemiplegia, left facial paralysis, complete aphonia, respirations 30, pulse 140, temperature 104.5°. The wound was explored without result, and thirteen days later trephining was performed low in the temporal fossa. Laplace devised an instrument for the removal of the clots. I quote from his report:

"To reach the center of the base of the brain for the removal of the suspected clot, a miniature egg beater, consisting of four loops of platinum wire, had been improvised. This was perfectly malleable, and could be insinuated between the dura mater and the skull without wounding the cerebral structure. Having reached the cavernous groove, the instrument could be pushed no farther. It was then turned on its axis for the purpose of catching coagula in its loops. This was effectually accomplished, and about a teaspoonful of clotted blood removed piecemeal. While dragging more out, considerable venous hæmorrhage took place. The trephined opening was then immediately plugged with iodoform gauze," and the usual dressings were applied. The wound was entirely healed in three months, and six months afterward the patient had equal use of both extremities.

Dr. Laplace emphasizes "the safety of trephining near the base of the skull, the ease of arresting violent hæmorrhage from the sinuses of the dura mater, and the importance of drainage in all cases of cerebral injury." (*Medical News*, Philadelphia, Dec. 5, 1891.)

Drs. Starr and McBurney have reported a case of traumatic hæmorrhage from a vein of the pia mater, with compression of Broca's convolution, and of the sensori motor area of the cortex, aphasia, partial right hemiplegia, and hemi-anæsthesia, with trephining and removal of the clot. The patient recovered. They remark on this case:

"Trephining for aphasia is not uncommon after such injuries as fractures, blows or stab wounds in the temporal region. There are very few reported, however, in which it has been done when no external injury was present. That it is necessary to distin-

guish motor from sensory aphasia, and thus determine the place for trephining, and that it would be somewhat venturesome to trephine if the aphasia were only partial, are facts which require no comment. The case reported demonstrates the possibility of successful removal of clots from the cortex, and the necessity of early surgical interference. . . . ." The case also indicates the existence of tactile sensory functions in the cortex of the motor area, and thus supports the conclusions reached by Dr. Starr, in 1884, and confirmed by Dana and Horsley in 1888.

Dr. Andrew Smart reports, that Prof. Chiene trephined for basal hæmorrhage in a woman lying at the point of death and saved his patient. There was an antecedent injury and Prof. Chiene at first trephined at the right parietal eminence but finding the result negative, again applied the trephine lower down, and forward. The exact position is unfortunately not stated. There was free hæmorrhage from the membranes, but the breathing became normal, and after incising the dura there was evident relief to the cerebral pressure and tension. (*Brain*, London and New York, 1891, page 287, 288.)

Dr. A. J. McCosh reported one and Dr. Jos. D. Bryant reported one case of trephining where there existed no scalp lesion, but paralysis and convulsive seizures localizing the lesion-clot over the motor centers in the opposite hemisphere to the paralyzed side. The case of Dr. McCosh recovered. The result in the other case is not stated. Dr. R. H. M. Dawbarn reported a similar case where he failed to find the clot, but at the necropsy he found the clot on the same side as the paralysis.

Dr. T. Lloyd Wells reports a case of subdural intra cranial hæmorrhage. The patient had epileptic convulsions beginning in right eye, or right angle of the mouth, then right arm and leg, then becoming general. Trephined over left motor area. Recovery. (*N. Y. Med. Jour.*, May 14, 1892.)

Our distinguished fellow member, Dr. Jno. B. Roberts, of Philadelphia, who, in 1885, was one of the foremost in urging more active interference in diseases and injuries of the brain than was then prevelent, has in a recent article (*Medical and Surgical Reporter*, Philadelphia, Jan. 2, 1892), made a strong plea for conservatism. He would reject any operation unless it held out a positive hope to the patient, and he condemns what he terms "experimental operations." To prevent hæmorrhage from the scalp, which all operators know is sometimes very troublesome, he uses a rubber bandage; and he uses a trephine of his own invention, which has for its chief merit, that it is capable of being perfectly cleansed. Dr. Roberts still adheres, however, to his original recommendations, and insists without reserve on the trephining of all punctured fractures.

Tumors.—The almost constant appearance of optic neuritis in cases of cerebral and cerebellar tumors, has been already mentioned, and that they may cause epilepsy has long been known. The following case, by Dr. C. S. Bull, is instructive as showing slight neuritis and that unilateral. (*New York Medical Journal*, Jan. 9, 1892.)

The patient has had for ten years irregular attacks of *petit mal*, occasional lapses of memory, no headache until a few hours before death. Eight months before death, ptosis of right upper lid, both internal recti; left eye pupil twice diameter of right, unchanged for a year. In right eye, moderate neuro-retinitis. Left eye, normal. The neuritis and muscular paresis disappeared under mercurial and iodide of potassium. Next followed vertigo, then left hemi-anæsthesia, then well marked epileptic seizures. Vision right eye, $\frac{20}{30}$. No diplopia, but greater lapses of memory, mind otherwise good. No paresis. Just before death there was terrible occipital pain, delirium and coma. At the necropsy the tumor was found in left cerebral hemisphere, 2 inches long and $\frac{3}{4}$ inch wide, reaching to within 2 inches of anterior extremity of hemisphere. The tumor involved the corpus callosum and protruded downwards from the roof of left lateral ventricle. The tumor was anterior to a vertical section through the lower ends of the Rolandic fissure.

In the *London Lancet* of Feb. 15, 1892, Dr. J. A. Campbell reports a case of hematoma of the brain, which was then supposed to be undergoing organization.

Dr. Preston of Baltimore, in an able review of the subject of tumors of the cerebellum in the *Alienist and Neurologist*, for April, 1892, expresses his opinion that while the operation for their removal is not very difficult of performance, the results up to this time do not warrant interference. So many of these neoplasms are malignant.

"Nixon describes (*Medical Press and Circular*, Vol. CIV, No. 9) the case of a man, aged 28 years, who suffered from attacks of giddiness, forgetfulness, and defective vision. There was a history of syphilis. Later, intense pain in the head developed, which extended around the forehead and down the neck. Paralysis of the left leg and arm followed, and double optic neuritis. Patient was dull. Control of the sphincters was lost. Trephining was performed at the right parietal eminence, as this was the former site of a suppurating sebaceous cyst, and it was thought perhaps an abscess might have developed beneath the skull. The bone was extremely dense, and a half an inch thick. The meninges were matted together and thickened. A hard cartilagenous substance was seen dipping deeply into the brain, and running forward toward the fissure of Rolando. A portion, also, ran inward toward the falx cerebri. The neoplasm was removed, and the wound treated by the usual methods. When the patient recovered from the anæsthetic he was quite conscious, was free from all pain, and was able to move both his arms and legs. Control of the bladder and rectum also returned. The patient did well for some five weeks, when a hæmorrhage occurred from the wound, which was the site of the cerebral hernia. Styptics were applied and the wound redressed. The patient became comatose, and died some hours later.

"This is believed to be the first case in Ireland in which a solid growth has been successfully removed from the cranial cavity."—*American Journal Medical Sciences*, June, 1892, p. 714.

Cerebral Injuries in the New-born.—The subject of cerebral injuries in the new born, due to pressure on the head while passing through the pelvis of the mother, and due to forceps delivery, has had some attention, but so far as operative interference is concerned, the results are negative. Dr. J. Madison Taylor has written an article on this subin a recent number of the *Annals of Gynecology and Pædiatry.*

Craniotomy for intra-cranial pressure has lately come into public notice, and I am sorry that an ill-

chosen word has been applied to this operation, so recent that it has not yet found a place in a medical dictionary. I refer to the term "craniectomy." This is manifestly an incorrect term, and should be abolished before it becomes permanently fixed in surgical literature. The Greek suffix τομια from τέμνω "to cut," is equivalent to the English word incision. The suffix ἐκτομια from ἐκτέμνω to "cut out," is equivalent to the Latin word *exsectio*, or extirpation. The correct word is, therefore, craniotomy, or cranial section.

Dr. L. C. Lane, of California, has reported two cases in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, where the operation was performed for the relief of imbecility due to premature closure and microcephalis. In the first case through a saggittal incision he removed a medium strip of bone, one inch broad, extending from the anterior to the posterior fontanelle. On each side the operator removed sections of the "remaining parietal bones," "so that the excised spaces resembled a cross of which the arms were of equal length and breadth." The underlying dura was separated from the bone and protected by blunt dissector. Death resulted in fourteen hours from prostrating effect. In the second case Dr Lane states, that the exsected space resembled the letter H. The operation was performed "several months ago," and the child, which survived the operation, gives unequivocal evidence of mental improvement.

Following Lannelongue, who has had twenty-five cases, many surgeons have performed this operation, but so far without very definite results. In fact, the time is yet too short to give a positive statement as to the permanent benefit derived by the first cases; but in an extended article on the subject in the *Gazette des Hôpitaux* (Jan. 28, 1892) M. Pengrueber concludes that craniotomy may show immediate beneficial results in those cases where there are indications that certain faculties are preserved, and he cites a case in which the effect was immediate.

The operation of spinal laminectomy has been recently proposed by Mr. Tuke, as the ideal surgical treatment for the relief of intra-cranial fluid pressure. He says that "the operation which appears to me most likely to obtain thorough drainage of superabundant cerebro-spinal fluid, is laminectomy of the second or third lumbar vertebra, puncture of the loose arachnopia, and, as suggested by Mr. John Duncan, the insertion into the pial sac of small threads of horse hair. Mr. Duncan also informs me that he has lately performed the operation of laminectomy at the suggested spot for traumatic injury, that he found little difficulty, and that although the flow of fluid amounted to 8 oz. a day for three weeks, the patient recovered." *British Medical Journal*, No. 1620, p. 105. It is well known that the mortality in operations on the spinal column, decreases exactly in proportion as the operation is farther away from the cranium, and it would seem as if the suggestion of Mr. Tuke was worthy of being put to trial, in suitable cases, before performing the more radical operation of craniotomy.

In an article by Dr. M. A. Starr, *New York Medical Journal*, Jan. 23, on the cerebral atrophies of childhood, he thus formulates his views:

"When manifest atrophies are present, the operation (craniotomy) will not produce any result. When the condition is one of arrested development of cerebral tissue, it may prove of service; when clots, cysts, or tumors are found and removed, the chance of recovery is increased; when the skull is markedly microcephalic from early union of the sutures, the increased space given to the brain by the operation appears to stimulate its growth and development.

"Epileptic attacks are frequently reduced in frequency, and modified in character by craniotomy. When the opening in the skull remains covered only by the soft tissues, it appears to act as a safety valve allowing changes to occur without producing pressure on the brain.

"While hemiplegia, aphasia, athetosis and sensory effect have been relieved by operation, it is as yet impossible to predict to what extent imbecility may be relieved."

Dr. Starr very properly suggests that cases should not be reported until six months after operation. Horsley says, five years in cases of epilepsy.

Trephining for Mental Disease.—The ancient practice, abandoned doubtless for a very good reason, has lately been revived.

Sepelli, in an article in the *Alienist and Neurologist* for April, 1892, on the surgical cure of mental diseases, mentions trephining for general paralysis and says: "Shaw trephined a man who had hallucinations of grandeur, with difficulty of articulation, and who was subject, from time to time, to convulsive attacks with brief periods of loss of sensibility, especially in the limbs of the left side." Trephining was done on the right side and "considerable" subarachnoidian fluid removed. The convulsions ceased and the patient greatly improved. He quotes Crip's case, where there was general paralysis, sensory disturbances, ataxia, alterations in speech, and headache at seat of injury received a few years previously. He was greatly improved by trephining. Wagner's case is also mentioned, in which (March 14, 1890) there was general paralysis. The attack came on with a convulsion of the left side, and vomiting followed by profound coma, and paralysis. He was trephined after waiting two days. He then improved for about two months, when a second attack supervened. The necropsy showed pachymeningitis, and pus in the right hemisphere.

Burckhardt, at the Berlin Medical Congress, reported six cases of paretic dementia treated by trephining and cortical excisions, and reports amelioration in their conditions, "but it is extremely doubtful," says Sepelli, "if these cases will become curable in any degree by surgical methods."

Ray, however, in the *Jour. des Soc. Scient.* for September, 1891, concludes that the trephine may temporarily ameliorate paretic dementia.

Dr. F. J. Adams, of Great Falls, Montana, reports a case of paralysis and convulsions, cured by trephining, and as he found no abnormal conditions, he attributes the cure to the effect of the trephine *per se*.

Trephining for Epilepsy.—The journals are filled with cases like these. Dr. M., in *Medical Age*, November 25, 1891, reports a successful case of trephining for traumatic epilepsy. No fits eight weeks after. Need it be pointed out that the time elapsed between the operation and the report was entirely too short to be of any service? Almost against my will, and to satisfy a patient, I operated on an epileptic at the Presbyterian Hospital in November last. There was a distinct and connected history of a previous injury,

and the usual aura. There were no distinct focal symptoms, but trephining was performed at the site of the old scar. The convulsions were arrested for some time, and the man went home to Dakota happy, but the epilepsy recurred in four months. He imagines they are "lighter" than before.

Keen and Mills report (*Amer. Jour. Med. Sciences*, Vol. cii, No. 6) a case of operation for Jacksonian epilepsy, and the removal of a tumor from the motor area. The trephine was set "1.75 inch to right of median line, in line of fissure of Rolando." The convulsive seizures began in the left arm. Seven months after the operation there was recovery of motion and strength in paretic members; "two or three" mild seizures a day instead of a dozen severe ones as before the operation. His health was better, and he had gained ten pounds in weight.

In the *London Lancet*, No. 22, Vol. ii, 1892, Mr. Alexander Miles reports two cases of trephining for traumatic epilepsy, one case improved. Mr. Pick, in the succeeding number of the *Lancet*, reports three cases of traumatic epilepsy, trephining and recovery. In only one of these cases the time is stated, and that eighteen days, so that it is only fair to Mr. Pick to assume that when he says "recovered," he means that the patients recovered from the operation.

Tansini, *Gazetta Med. Lombardi*, January, 1892 (*Brit. Med. Jour.*, March 5, 1892), reported two cases of trephining for epilepsy. In the first case there was no history of traumatism, but there was a marked projection in the neighborhood of coronal suture on right side, behind which, running in a transverse direction, there was considerable depression in which the pulsation could be distinctly felt. These lesions were in the situation to account for the motor and sensory symptoms, and were considered by Tansini to justify the operation. No lesion on the surface of the brain was discovered, and at last reports the patient was having convulsive attacks, although lighter than formerly, and his disposition is supposed to have been improved by the operation. The other case, a girl, had tonic and clonic spasms following an injury to the skull with depression of the bone. In this case also the attacks returned.

There were many more of these cases reported during the year, but I think it will be conceded that they are far from satisfying one as to the propriety of continuing the operation. It may be that by a careful selection of cases, and the use of the electric current when the convolutions are exposed, we shall be able to produce better results. The use of electricity to determine the exact portion of convolution to be removed, was first proposed by Horsley, who at the time asserted that the use of antiseptic solutions might interfere with the successful application of the electric current. To obtain the effect, two delicate electrodes about an eighth of an inch apart are applied directly to the exposed cortex and passed over it until the portion is found which produces the spasm in the muscles corresponding to that initiating the convulsion.

The late Dr. D. Hayes Agnew, whom we all lament as having passed away since our last meeting, read an article "On the Present Status of Brain Surgery," at the September meeting of the American Surgical Association. This exhaustive paper covers the entire ground. He concurred in the dictum of Mr. Horsley that it was not proper to call a patient cured until five years after the operation, and he concluded that traumatic epilepsy is practically incurable by surgical operations, and that a considerable number of such cases had better be relegated to the domain of medicine. He held that traumatic epilepsy should be *prevented*. I quote his language.

"The doctrine that depressed fractures of the skull without symptoms required no operative interference, a doctrine which in the past has been so deeply rooted in the professional mind, I hold to be responsible for many, very many of the unfortunate sequels of head injuries. However small may be the depression which follows a fracture of the cranium, save in one or two localities, it will encroach enough upon the dural nerves to cause more or less irritation; though insignificant at first and not at all recognizable to the consciousness of the patient, yet eventually that irritation will be propagated to the meninges, and the ganglia, until finally the paroxysmal explosion occurs; and then, even when the initial lesion is removed, the slowly established habit, created by years of excitation, will remain as an ineradicable legacy. No amount of foresight can determine what happens to the inside of the skull after the reception of an injury by any inspection of its exterior surface; the physical properties of the two being so very unlike. Whenever, therefore, in my judgment, the profession can accept the doctrine that all depressed fractures of the cranium, however slight may be the depression, and entirely independent of pressure symptoms, are proper subjects for trephining, then will traumatic epilepsy largely disappear from the list of surgical diseases; indeed I am sure that he who shall propose to tabulate at the end of the next 25 years the cases of traumatic epilepsy will find as compared with the present time a meagre supply for his purpose."

In Jacksonian epilepsy, Agnew says the presumption is against a permanent cure by operation, and he based this view "not simply on the history of recorded cases, but on the changes which must necessarily follow the excision of cerebral matter, that for example, which results from pressure of reparative cicatricial tissue." The Gussenbauer case, where epilepsy followed the evacuation of a cerebral abscess, is mentioned to sustain the point. In concluding his rather pessimistic paper he gives the following deductions:

"1. That all fractures of the skull attended with depression, however slight, and entirely irrespective of symptoms, should in view of the late after effects, be subjected to the trephine.

"2. That trephining for traumatic epilepsy promises only palliation at best.

"3. That trephining for Jacksonian epilepsy is to be regarded as only affording temporary benefit.

"4. That trephining for abscess, in view of the fact that all such cases left alone almost invariably terminated fatally, is entirely proper, and that the earlier such operations are done the better.

"5. That trephining for intra-cranial hæmorrhage is both imperative and a highly promising operation.

"6. That trephining for cephalalgia or traumatic headache, medical measures having failed, should be undertaken with every prospect of success.

"7. That trephining for hydrocephalus is a useless operation.

"8. That trephining for microcephalus independent of athetosis, confers no credit upon surgery.

"9. That it is more than probable that as our ob-

servations multiply, the sphere of the trephine as a preliminary measure for the removal of brain tumors will be lessened rather than amplified."

In the discussion which followed the paper, there was a general dissent from the conclusions as too pessimistic; but Dr. J. J. Putnam in the *Boston Medical and Surgical Journal* for January 7, 1892, viewing the matter from a purely neurological standpoint, sustains in effect most of Dr. Agnew's conclusions, and thus formulates his own views:

1. "The causes of epilepsy are numerous, and we cannot hope in most cases to remove them all by early trephining and care of the wound, though these measures and especially the removal of fragments are probably very important.

"2. The local and the general injury of the brain are probably of prime importance as causes of epilepsy, and are to some extent independent of fracture. The former may perhaps sometimes be treated as suggested by Keen, but the latter can only be reached by general treatment.

"3. The treatment of the general condition of the brain, by cold and by prolonged absolute mental rest is probably of great importance, and might perhaps be reinforced by other measures directed to the same end.

"4. The occurrence of localized convulsions or auras does not necessarily indicate limited local disease to be removed by operation, since on the theory that the disease is a general one it would have to find some local expression. It is especially true that convulsions or sensory aura beginning in the hand or face are untrustworthy indications of the extent of the cerebral lesion, because the cortex corresponding to these parts has a high degree of irritability.

"5. Considering the long period that usually elapses after an injury to the head before epilepsy declares itself, a period during which the patient may be perfectly well, it is reasonable to seek for some better term than 'local irritation' to express the connection between the two events. We may fairly suspect that in most cases a degenerative process goes on which increases in extension and perhaps in intensity; sometimes a neuritis starting from the seat of injury seems the important link."

It will be seen that there is not substantial accord on this subject in all countries; they are decidedly more radical on the Continent of Europe. The following are the conclusions of a memoir by M. M. Leonte and Bardesco (*Rev. Chirug.* Paris, 1891, Abstract in *Jour. de Med.*, No. 10, 1892):

"1. Trephining is a comparatively harmless operation when done according to modern antiseptic methods. The doctrine of cerebral localization has multiplied its indications and rendered it frequent.

"2. Intervention is justifiable in cases of paralysis or convulsions when these are due to organic irritation or to function destruction of encephalic center.

"3. Special note should be taken as indication for operation not only of the motor, but also of the subjective sensory and sensitive disorders, since these signs afford instruction as to the locality for operation. *a*. The operation is indicated in cases of symptomatic convulsions or paralysis. *b*. In essential epilepsy the operation is empirical and its results difficult of appreciation. Nevertheless, trephining may be performed *in extremis* and for exploratory purposes.

"4. The earlier the operation is performed and the nearer to the first appearance of the nervous symptoms, the more assured will be its success. The success of the operation depends also upon the age of the individual, and from this point of view it may be said that there is an inverse ratio between the age and the success of the operation.

"5. When monoplegia exists with the convulsions, which happens with serious organic or functional lesions of the brain, trephining is formally indicated; its success depends in these cases upon the length of time the symptoms have existed. The appearance of the trouble after the operation does not destroy its value when it is delayed.

"6. Repeated operations on the same side or alternately on the two sides, the making of large openings in the cranium and extensive incisions in the meninges, are justified by the principle of surgery 'complete work'.

"7. In conclusion the results obtained up to the present time from this rational and scientific operation in the medico-chirurgical disorders of the brain are satisfactory enough to lead others to continue in this direction."

In regard to the treatment of epilepsy, Dr. Sachs in the *New York Medical Journal* for February 20, 1892, says: "What can we expect from the surgical treatment of epilepsy?"

"Simple trepanation seems to be more successful in these epilepsies associated with infantile palsies than in the traumatic forms, probably because of the still greater frequency of cysts in these cases than in the traumatic forms. Forty-four per cent. of all cases of infantile paralysis develop epilepsy. Of all cases of epilepsy a very fair proportion were developed in connection with infantile palsies. As soon as epileptic symptoms appear, the paralysis has the value of a focal symptom. In children excision of a center is a less serious affair than in the adult, for in the former, other parts of the cortex are capable to a greater degree of assuming the functions of the destroyed part. Under favorable conditions the surgeon may be able to cure a few cases of epilepsy. He will be able to improve many."

It will, I think, be apparent that there are now theoretical statements enough; what is needed to clear up the matter more than anything else, is time to observe cases reported as cured.

Operations on Cranial Nerves.—It is perhaps scarcely within the scope of this paper to enter exhaustively into the literature of the year on the topic and yet I cannot close without reference to the operations of Rose, Horsley and Andrews on the Gasserian ganglion for the relief of chronic neuralgia, and of Fletcher, *Journal Nervous and Mental Diseases*, May, 1892, of trephining for the relief of paralysis of third nerve, and the excellent paper of Dr. Frank Hartley, on Intra-Cranial Neurectomy of second and third divisions of the fifth nerve, *New York Medical Journal*, March 19, 1892. His operation is on entirely different principles from either the Rose or Andrews operation, as will be seen.

"An omega-shaped incision was made, having its base at the zygoma. The curved and rounded portion of the incision reached as high as the supratemporal ridge, diameter of said circle being three inches; the tissues were then retracted and the periosteum divided upon the bone in the same direction and as far as the straight part at the base. With a chisel a groove was cut in the bone corresponding to the

divided periosteum. This groove went to vitreous plate, except at the upper angle where it included the vitreous plate.

"A periosteum elevator was here inserted and used as a lever to snap the bone on a line between the ends of the circular incision, giving a flap consisting of skin, muscle, periosteum and bone. The exposure of first, second, and third divisions of the fifth nerve, and of carotid artery and cavernous sinus, was exceedingly good."

In closing this long review, perhaps over-burdened with quotations from accessible authors, I have to say in extenuation that the transcendant importance of the subject is my only excuse; and I could think of no better way of fulfilling the duty assigned me than by grouping our recent authors in such manner as would set forth their views as nearly as possible in their own language. It will be seen that while there has been a distinct gain in many branches of cerebral surgery there is yet very much to be perfected, but all this wonderful advance is directly due to the great discovery of Pasteur, and the practical genius of Lister. Antiseptic methods have alone made advance on the old lines possible. The Rip Van Winkle of the profession may well rub his eyes and quote the lines of Macbeth:

> The times have been; that
> When the brains were out,
> The man would die and
> There an end; but now they rise again.

ADDRESS ON GENERAL MEDICINE.

Read before the American Medical Association, at Detroit, Mich., June, 1892.

BY ALBERT L. GIHON, A.M., M.D.,
MEDICAL DIRECTOR UNITED STATES NAVY.

In accepting the invitation to fill the breach caused by the illness of your appointed speaker on general medicine, I can but feel that I have imprudently undertaken a weightier task than, at the time, I fully realized. The very flattering terms, in which the appeal was conveyed, left me no option to decline, and blinded me to the responsibility I was assuming in agreeing to address this great body of experts in medicine on the vital issues involved in the address expected. Hence, I can only ask your indulgence for my shortcoming in begging you, who lead busy lives, to reflect how impossible it is to do in a few short days, what is, rightfully, the careful deliberate work of preparation for a whole year. What I say, therefore, shall only be in the way of desultory comment on medicine in general, instead of a systematic digest of the year's achievements in the practice of our art.

To me the most gratifying outcome of the year is not the announcement of new therapeutic means, nor the publication of nosological novelties. With these, you are more familiar than I am, for the searchlights of the medical press now leave no dark corners where men may dig and delve for hidden treasures, with which some unexpected day to startle the world and bring them fame and fortune. He, who works to-day, stands in an amphitheater with the whole profession looking and listening, condemning or commending, through their accredited representatives, the fraternity of medical publicists of every nation; and here, as your reporter of the doings of the year, I find it my pleasant duty to congratulate the profession on the higher standard of medical editorship, which is becoming our national characteristic. Fervid ambition still impels tyros in authorship to engender premature offspring, but as with all man's progeny only the fittest survive, we have a body of stalwart adult and veteran periodicalists, who do their work of enlightenment masterfully, and in friendly concurrence. If there be any in this assembly, who have not studied these living text-books of our science, day by day, during the past year, how idle would it be for me to seek to cover their indifference and neglect with the veneer of a twenty minute random résumé of a few prominent occurrences. Perhaps, I can perform part at least of the duty imposed upon me, in no more practical way, than by seeking to awaken in the medical body politic a livelier consciousness of some of its obligations outside the routine duty of the general practitioner. One of these obligations is the earnest countenance and substantial support of its organs of intercommunication, —not merely by subscribing for them but by contributing to them the results of individual observation, experience and research that all mankind may profit by them. Only with such generous and general support, can any medical editor, independently and impartially, fill his waste-basket with the crudities and spurious offerings that are poured upon him and thus become the censor and preceptor the press assumes to be. Eminent distinction in medical as in secular journalism is the reward of pronounced merit. Its office requires the highest order of ability, the broadest culture, the widest range of information. If other specialties be the hands and eyes of the profession, this is the silent thinking brain, which in the vaulted attic away from active participation in the world's affairs, reflects the impulses which go to make up active life. Without statistics of circulation, I am confident it would be found, as indicating intellectual progress in medicine, that medical periodicals are more widely read and their contents more carefully scrutinized, while their editorial leaders, notes and criticisms are more independent, fearless and unbiased. It is enough to enter a physician's office and scan the periodicals (for there should be more than one) upon his table to judge his own mental and professional development.

But if a higher order and wider circulation of current medical literature be indicative of the better self-instruction of the adult practitioner, we have reason to congratulate ourselves upon another sign of the medical progress of the day in the reform of the system of scholastic education of the young entrants in the profession. It is not necessary to detail here what has been done in this direction. The medical press has fully recorded, while it has advocated and encouraged, the advance from the old two full courses, dove-tailed with nominal three years' office instruction, of our early days, to the splendid system that finds its fullest expansion in this current year. A minimum of three full courses, in many schools four, and these consequent upon prerequisite academic or collegiate tuition, expressed in one university, in no unmistakable terms, as six years of continuous college tuition for the intending physician, is a prouder achievement in medicine of this year 1892, than all the additions to its pharmacopœia or all the refinements of its therapeutic theories. The seven grave and reverend professors of our school-days sit still enthroned on their several chairs

but on loftier eminences, for surrounding each are other seven and more, to aid them in the tasks which have outgrown their own individual capacities. College faculties have grown apace with medicine—and twenty, forty, sixty, more than a hundred busy teachers stand ready to fill with oil the lamps of those who would see far into the mystery of this human existence. All the schools have not gone thus far, nor are all the periodicals such grand exemplars as make their own abilities the sole measure of what is fit or unfit, but there are enough of these great beacon-lights in the north and east, at the fountain heads of our science at the metropolis and at that old Quaker City where medicine was early dignified—in the west and at the farthest south to attract within the glory of their brightness, all whom it were worth attracting. A few years more and it shall come to be an opprobrium not to have been a graduate of one of these real schools of medicine. That this fulfillment may be hastened, it becomes the duty of every member of this body—which should be every member of the profession—by reason of his own lack of early opportunities—by the years he has had to sacrifice to accomplish what he may have done and often superlatively well done—by his own comprehension of the sublime greatness of this unrivaled science of medicine, in which, however old we may be, we can have traveled but a little way, to bear testimony of his appreciation of the increasing immensity of the task devolving upon those who succeed us, and to guide these successors of ours where the light is brightest, the road broadest, and the far off end ever clear in view. He shall serve medicine best, who shall see that the young laborer is best equipped for his life-work by natural aptitude, by proper preliminary training, and by a thorough understanding, that light and wide and straight as the way may be made, it is long, toilsome and uphill before the highest eminence be reached—beyond which still the over-hanging firmament ever defies approach.

But a medical man has not done all his duty in supporting, contributing to and digesting one or more medical periodicals, however able and meritorious, and in advocating schemes of higher medical education. The physician ought not to isolate himself from active participation in the affairs of the community in which he lives, nor of the guild to which he belongs. He should manifest his pride in his vocation by encouraging the congregation of all who share it with him in professional societies, both after the American system of municipal, county, State and National organization, and in the special association of those of distinctively kindred pursuits—and this not in the trade-union spirit for mere mercenary ends—but to promote harmony, good-fellowship and mutual improvement of men engaged upon the self-same work. While it is not always feasible to leave home and occupation to attend the annual reunions of the great national bodies, it is within the power of every physician to gather together with his professional neighbors—be they but two or three—in friendly concourse. In this American Medical Association, are now enrolled about five thousand members and represented about three hundred and fifty societies. Its membership ought to comprise the entire medical profession of America, undivided by schism or sectional interest, and its representation embrace every State and minor body in the country, with such modification of plan, perhaps, as may bring it more in accord with our American idea of *e pluribus unum*. Without advocating any particular method of accomplishing this object, I only now desire to point the injunction that every graduate of medicine should be in active fellowship with one or more medical associations, whether for individual improvement, friendly intercourse or social example.

Nor should the pendulum swing too far one way. The doctor should not be only a doctor—else he be deemed in truth the leech of the caricaturists in semi-clerical garb with pompous air and gold-headed cane, or the olive colored garment and æsculapian badge by which, in recent years, it has been gravely proposed to distinguish him. Social example has wider field than the assembly-room of a medical society. The physician should be the first citizen of the commune, peer in education and culture with its highest classes, and leader in all the sociological and political movements of the day, and this without abating one jot his professional character or neglecting any whit his professional duties. To the young medical man who listens to me, or who may read my words, I would point as the splendid example of the learned physician, who was the exemplary citizen, the active philanthropist, the busy man of the world and jovial companion, as well as the greatest teacher, lecturer, writer and practitioner of medicine which this country has ever produced—Benjamin Rush—and say, seek to be worthy and useful, honored and respected as he was. Do not bound your horizon by the walls of your office nor limit your intercourse with your fellow men to interviews with patients and consultations with brethren of the cloth. Everywhere may be seen the first men of the profession sacrificing social amenities and indulgences and the companionship of their friends and families upon the tread-mill round of office and clinical labor, knowing neither pleasure nor relaxation until the end comes when the statistician records another unit in the class of early death rates. In mental occupation, at least, the physician should be omnivorous and polygamous—in the world and of the world—loyal above all to medicine as his first love, but not blind to other beauties nor deaf to other harmonies. The medical fraternity is singularly reclusive, yet with strange inconsistence chary of hero-worship, if its heroes be its own. During the Civil War, it was not excelled in loyalty and patriotism. Two of the founders of the Military Order of the Loyal Legion of the United States were medical men—one happily still with us—and the Grand Army of the Republic was the sole creation of another. The posts of the latter and the commanderies of the former have their full quota of M.D.'s, many who had gained their brevets as commanding officers in the field, as well as those who with equal peril and personal bravery rendered their humane offices to stricken comrades. Yet even these men generously applaud successful generals and remain silent when their own confrères ought to be extolled. Within a month, I have seen physicians actively canvassing for subscriptions for statues to great military leaders, who have never contributed one dollar to the monument to their own immortal hero, who signed the Declaration of Independence at the peril of his life, who as a member of the Continental Congress braved attainture as a rebel, and who breathed the breath of life into the figure of

the new Republic, whose Constitution he had helped to frame, who died as he had lived, booted and spurred, with face to the foe, from whom he was striving to protect his fellow-men. This is not the time for me to enlarge upon this strange anomaly of indifference. Besides it is a sermon I have often elsewhere preached, sometimes, I fear, to unwilling ears.

The intellectual progress in medicine, to which I have alluded as the laudable characteristic of our day, has naturally led to the recognition of preventive medicine as the type of highest medicine, and the fact that I am so committed to this belief made me hesitate to assume the *rôle* of your annual reporter, lest I trench upon the ground of my friend Dr. Lindsley, for one cannot speak of medicine in this day, without having first of all before him the problem, how can this disease be best averted, which it is our later office to combat? and the more we learn of the nature and cause and history of disease, which the brightest minds are now studiously investigating, the more urgent becomes this problem. I can therefore shield my own delinquency behind the assurance that the address in State Medicine which is to follow, shall cover this very ground.

The discovery of this or that microbic cause, or coincident or inevitable consequent of cause, of one disease after another, naturally led to the deduction of special germicidal agencies for each, and for a time, there was an appalling prospect of preventive hypodermic tattooing, scarcely less repulsive than the disease, and a bravado resolve to let each particular microscopic devil do its worst. Multiplying a million a minute, it was realized that we could be no match for our Lilliputian enemies, whom we could not kill by drugs without at the same time killing ourselves. Apace with the bacteriologists' revelations have been the chemists' syntheses, which, however we might be disposed to recommend to our friends and patients, none of us were brave enough to care to take within our own economies. I confess to no intimate familiarity with these latest evolutions of the laboratory, though the names of some I know by sight very well, even if most of them I neither can speak and neither can spell. Hence it was a gratifying announcement that we had within ourselves our own defenders and defenses. "In the blood is the life thereof" began to have greater significance through the belief that its living cells devoured these countless swarms of intruders, and thus prevented their disastrous inroads. It was enough for us, then, by tonic and alterative, and stimulant and corroborant, to preserve the appetites of these domestic phagocytes, and see that they were always in sufficient force to patrol the avenues of the circulation. So, the homely phrase of cleansing the blood of its impurities came back like an old friend in a new dress—but already we are called upon to abandon our bio-therapeutics, with its war of the microbes and the final victory of good over evil-minded bacteria, as poetic fancy, and now comes the chemist with potencies, that are marvelously alike in looks, which set sail on their mysterious voyage in the channels of the blood to neutralize the toxic products of each malefic monad.

Among the pleasantest recollections of my early life are those of my old preceptor, whose father, himself a favorite pupil of Benjamin Rush, had conferred the latter's name upon his own son, which doubtless explains my inherited admiration for that wonderful man. I recall how carefully I was indoctrinated with the belief, which I have not been over-ready to abandon, that nosological nomenclature was a treacherous guide, that diseases were not so many entities for which specific antidotes were to be sought, and that the cardinal points of diagnosis to guide the medical pilot were the grade of action as indicated by the pulse, the state of the secretions and the condition of the organic fiber. To-day, we go behind these with lens and test-tube to ferret the particular microbe, bacterial proteid or chemical toxine, which has disturbed the circulation, obstructed the flow of the secretions, or irritated, inflamed or disorganized the basis structure of the tissues.

It would be unpardonable, therefore, in an address on medicine, however cursory and superficial, that should neglect to give due credit to the bacteriological investigators, the scope of whose researches embraces not merely the discovery of disease causation, but the means for its prevention and cure. The busy practitioner, perhaps, has little time to follow diligently the discussions as to whether the bacteria themselves are the real enemies to health, or only the agents for the introduction of their proteid products or toxalbumins, ptomaines or other chemical toxines, which are the actual pathogeners. He is chiefly concerned as to the practical results of these investigations, and I am fortunately able to lay before you the very latest precise knowledge on this subject, as set forth only a few days ago by that master in this branch of science, my highly esteemed friend of many years, Lieutenant-Colonel George M. Sternberg, Surgeon United States Army, before the Association of American Physicians at its annual meeting at Washington. I esteem it a high privilege that I am permitted to transmit to you this authoritative statement of the practical results of bacteriological research.

Until a very late day, admits Sternberg, the bacteriologist's demonstration of the specific cause in a considerable number of infectious diseases had not resulted in the discovery of a specific treatment for these diseases. Preventive medicine has almost exclusively profited by his researches, as when the discovery of the bacterial parasite placed tuberculosis among the infectious diseases and the destruction of the sputum became a recognized practical necessity. Of the same order are the precautions of modern aseptic surgery and obstetrics, and the use of antiseptics in traumatic infection and in localized infectious processes. The use of the microscope in the early diagnosis of tubercle and diphtheria is a practical result for which the bacteriologist can justly claim credit, as well as the protection of domestic animals by inoculation largely practiced in France, and the prevention of rabies in the human subject, even though the specific infectious agent has not been demonstrated.

The chief purport of Doctor Sternberg's valuable paper (which, perhaps, it would have been well for me to have read *in toto* in lieu of anything else), was to present certain late discoveries, which suggest the possibility that we are on the eve of a new departure in the specific treatment of infectious diseases. Sternberg has described 475 species of bacteria of which 158 species are pathogenic, although all are not differentiated by morphological characteristics, and the latest discoveries have established the fact that the pathogenic action of those bacteria, which have been shown to be concerned in the etiology of specific infectious diseases, is due to the formation

of toxic products during the active development of the bacterial cells, and to isolate these toxines and toxalbumins is now the attempt.

Recent experimenters, significantly prominent among whom were three Japanese biologists, having demonstrated that the blood of an animal having a natural immunity against anthrax if injected into the body of a susceptible animal, protected the latter from anthrax, it was subsequently found that the blood of animals having an artificial immunity against tetanus or diphtheria injected into susceptible animals, in like manner, protected them against the effects of the injection of virulent cultures of the bacilli of tetanus or diphtheria, and finally Doctor Rudolf Schwarts, assistant to the surgical clinic at Padua, reported the actual successful treatment of an advanced case of traumatic tetanus by injections of *tetanus antitoxine* obtained by Professor Tizzoni from the blood-serum of a dog, which had been rendered immune against tetanus, and three other cases of success with this same treatment elsewhere, have been since reported.

Since Behring's experiments, in Sternberg's opinion, suggest the possibility that the potent toxalbumin of the diphtheritic bacillus may be neutralized in the bodies of infected animals, and the Klemperers having shown the probability that the blood serum of animals which have an artificial immunity against cultures of *micrococcus pneumoniæ crouposæ*, when injected into other susceptible animals, renders them immune, Sternberg indulges the hope that croupous pneumonia in man may be arrested by a similar mode of treatment. He further says, from analogy, based upon experimental evidence, the successful treatment of tuberculosis appears to call for the administration of *anti-tuberculin* rather than that of the active toxic principle elaborated by the tubercle bacillus. Animals which have an artificial immunity against rabies, as a result of the inoculation with an attenuated virus, owe this immunity to the presence of an antitoxine in their blood or tissue-juices, and Tizzoni and Schwarts, in January of this year, stated their belief that the antitoxine of rabies may probably be substituted for Pasteur's inoculations with an attenuated virus, not only with the object of preventing the development of rabies in man after the bite of a rabid animal, but also that it may prove to be curative after the symptoms of rabies are developed.

Erhlich's experiments with pathogenic toxalbumins not produced by bacteria, but of vegetable origin, Sewall's showing that immunity from poisoning by rattlesnake venom may be produced by injection of small doses of its toxic agent, and others give strong support to the view that all infectious diseases are due to the action of substances resembling the toxalbumins already discovered, and that acquired immunity from any of them is due to the formation of antitoxines in the blood of the immune animal—but while in many infectious diseases the toxalbumin is produced by a specific microörganism, we have no evidence that this is the case in the strictly contagious eruptive fevers, and none to justify a generalization that all infectious diseases, as small-pox and scarlet fever, are due to specific microörganisms. Sternberg suggests the possibility that in these diseases the toxalbumin, which gives them their specific character, is a product of the living cells of the body of the infected individual, and says the inference is justifiable that the blood and tissue-juices of any individual who has recently suffered an attack of small-pox or scarlet fever, contains an antitoxine which would neutralize the active poison in the circulation of another person immediately after infection, and he holds the experiment warrantable to ascertain whether a small quantity of blood drawn from the veins of the protected person would suffice to arrest or modify the course of these diseases. The transfusion of a moderate amount of such blood might be curative or confer immunity in advance of infection, and possibly an antitoxine may be obtained from the blood of vaccinated calves, which would have a curative action in small-pox. Dr. Sternberg has himself demonstrated, by recent experiments with the blood of vaccinated calves, that there is *something* in this blood which does neutralize the specific virulence of vaccine virus, both bovine and humanized.

I can hardly close without a passing reference to the malady which is on every tongue, and is credited with the virulence of a plague—the influenza—the influence whose mysterious grip upon the physically strong and robust, as upon the feeble and frail, leaving all alike mentally and bodily prostrated, has been attributed to some occult cause, acting upon or through the nervous system. It too is now known to have its bacterium, the latest microörganism to be discovered, unless the verification of the Berliner Hospital experiments shall give that distinction to the alleged bacillus of measles. The bacterial proteid of influenza has not yet been isolated, and when it is, and its antitoxine shall be demonstrated and successfully administered with curative results, a new era shall indeed have begun in general therapeutics.

Certainly, when prevention and cure shall go hand in hand, the high estate of preventive medicine can never more be questioned, nor that the wise physician's higher office shall be to guard this glorious human body—the crowning work of the Divine artificer—against these enemies from without, rather than wait to undo their malefic work. If we can not construct the simplest living cell, how can we hope to intelligently reconstruct one?

Granted this, when disease does invade the body, whether by neglect or ignorance, or deliberate defiance of nature's laws, shall we idly contemplate the evil and do nothing to mitigate, if we cannot wholly eradicate it? While the world endures, man's folly, as well as woman's, shall furnish work enough for practitioners of the healing art, both general and special, and to them a word of felicitation on their share in the progress of medicine towards a higher level.

The intelligent general practitioner is the intellectual primate in our profession—not a mere man of all work, ready to do any job after a rude fashion, without much understanding of its rationale. Nevertheless, however universal may become the requirements, and opportunities and results of higher medical education, it can hardly be expected in this land of unlicensed liberty, that the class of medical tradesmen can ever be entirely banished, and it may be necessary to establish distinctions, as in other countries, even if it be to surrender to them the all-comprehensive title "Doctor." Medical examining and licensing boards are the coarse sieves which do the preliminary sifting, but medical associations must, perhaps, become the means, which shall ultimately determine by rigid requirements of fellowship, which

are the men who stand upon the same level, and this the higher one—and this very high level is what has given necessary occasion to specialism. The expert specialist is the natural aid to the expert general practitioner—his ally, not his opponent and rival, the body of specialists being the planetary attendants upon the central luminary, which animates and impels them, and only subordinate in that each revolves without interference in its appointed orbit, the whole making one system. That this dignified and exalted recognition of the correlation and reciprocal dependence of the several parts of our profession is coming to be the general understanding is, I think, our greatest reason for self-satisfaction at this time.

ORIGINAL ARTICLES

REPORT ON ABDOMINAL AND PELVIC SURGERY.

Report of the Chairman of the Committee on Abdominal and Pelvic Surgery, read before the Kentucky State Medical Society, May 6, 1892.

BY WILLIAM H. WATHEN, M.D.,

OF LOUISVILLE, KY.

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REPORT OF THIRTY-ONE SUCCESSFUL LAPAROTOMIES.

(*Concluded from page 696.*)

In reporting the following cases I will omit many of the minor details. All of these operations except one were on intelligent private patients, and most of them at St. Joseph's Infirmary; they were seen by some of our most reputable physicians, and my chief assistant was usually either Dr. J. M. Holloway or Dr. F. W. Samuels, and the anæsthetizer Dr. Henry Orendorf.

Case 1.—Mrs. W., from New Haven, Ky.; aged 32; married fifteen years; has never been pregnant; was referred to me in the fall of 1889. A few months after marriage she had pelvic peritonitis and has since been an invalid, frequently suffering intense pain in the uterus or its adnexa, especially severe at the menstrual period. She has been treated by many physicians with but little temporary relief. The body of the uterus is pressed against the bladder and is not freely movable, but no enlargement of the ovaries or tubes, or pelvic exudates can be detected. Having treated her for six months with but little benefit I did a laparotomy May 25, 1890. The right ovary and tube were adherent to the back of the uterine body, and the pouch of Douglas was practically obliterated. The adhesions were relatively elastic, but so tough that it was difficult to dissect off the ovary and tube so as to ligate and remove them. The cavity of the tube was obliterated, and the ovary had no follicles. The left ovary and tube were not removed. There was considerable oozing of blood, and a drainage tube was used for two days. Recovery was uninterrupted, and she has had no pain at any time since, although menstruation has been regular. Before the operation she was never free from pain which was made very severe by walking a few squares; now she is able to walk several miles without immediate or subsequent inconvenience.

Case 2.—Mrs. B.; Louisville; aged 35; widow with no children. She has had a tumor in the pelvis and lower part of the abdomen for several years which causes menorrhagia, and such severe pain at each menstrual period that she is confined to bed for two weeks. We diagnosticated uterine fibroma the size of a child's head, with adhesions. She was not improved by treatment, and on May 24, 1890, an abdominal section was done, the adhesions separated, and tubes six inches long and the size of a large pencil, and ovaries three inches long, were removed. She had no untoward symptoms, and has been comparatively well, with no return of her menses. She is now able to attend regularly to all her domestic and other duties.

Case 3.—Mrs. L.; Louisville; aged 28; married, and has several children. Has been an invalid, and often suffered severely, for several years. Uterus pushed to right side, immovable, with a tumor firmly attached to it on left side the size of a goose egg. A laparotomy was done on May 6, 1890, the tumor separated from its adhesions, ligated and removed. It was wedged in the pelvis and everywhere adherent except the upper surface. There was considerable oozing and a glass drainage tube was used for three days. On the third or fourth day she had a temperature of 102°, but otherwise made an easy recovery and is in perfect health. The tumor was dermoid, nearly solid, and full of hair and sebaceous matter.

Case 4.—Mrs. P.; near Elizabethtown, Ky.; aged 44; married and has several children. Her abdomen has been enlarging for over a year and is now so distended that the pressure interferes with breathing; she has lost flesh rapidly and is greatly emaciated and very feeble, with bad digestion and a pulse over 100. The enlargement of the abdomen is ascitic, but in each ovarian region there is an adherent growth the size of a large orange. A laparotomy was done on August 1, 1891. The tumors were wedged in between the uterus and the pelvic walls and ascended above the plane of the superior strait. They were extensively adherent, but the adhesions were easily separated, and the tumors ligated and removed. They were beautiful specimens of papillary degeneration of the ovaries and had a malignant appearance. There was considerable oozing. The cavity was thoroughly irrigated with hot sterilized water and a glass drainage tube used for three days. She had but little shock, took no opiate, passed her water, had no untoward symptom and returned home, a distance of seventy-five miles, in two and a half weeks. She has regained her flesh and is now well. I was afraid there would be a return of the disease, for papillary degeneration of the ovary is often malignant, or semi-malignant, which cannot always be decided by a physical or microscopical examination.

Case 5.—Mrs. S., Paducah, Ky.; aged 35; married fifteen years but has no children; has suffered for many years with pain in the ovarian region; menses regular but profuse and painful. Has had some form of insanity for several years which her husband and friends believe to be caused by disease of the generative organs. She had been examined by several of the leading surgeons of Dayton, O., and of Springfield, O., but I did not learn that any tumor in the pelvis had been diagnosticated. Two years ago she was confined in a lunatic asylum for nearly a year, during which time her mental condition improved and she was allowed to return home, but very soon she relapsed into her former condition and has gradually grown worse. She is now positively insane, and I had to keep her at St. Joseph's Infirmary for ten days before she would allow me to make a physical examination. The uterus is a little enlarged and practically immovable, with a tumor on each side the size of a goose egg. A laparotomy was done November 16, 1891, and a pedunculated fibroid tumor was removed from the left side of the uterus, and an imbedded broad ligament cyst from the right side. A glass drainage tube was used for three days; she had no untoward symptom, the temperature and pulse remaining about normal, and she was sitting up in two weeks. When she had fully recovered from the effects of the anæsthetic and during convalescence there were no symptoms of insanity, but when her menses returned a little later she had some mental disturbance for two days, much milder, however, than before the operation. I have not seen her since but am told by her sister that she has had no insanity except a mild form at each menstrual period. Otherwise she is well. It would probably have been the correct thing to have removed the ovaries and tubes.

Case 6.—Mrs. N.; Louisville; aged 35; married and has one child 18 years old; consulted me in August, 1891. She has menorrhagia and profuse leucorrhœa, with severe pelvic pain, and is quite nervous. The cervix uteri is lacerated and a large surface abraded; there is some immobility of the uterus and the body is pressed a little toward the right side. A tumor the size of a turkey egg is found on the left side and one the size of a partridge egg on the right side. Under treatment the menorrhagia was cured and the abraded surface healed, but the tumors grew a little larger. On January 15, 1892, I did a laparotomy and removed a pus tube from each side without rupture; no irrigation or drainage were used. Her pulse remained for a week below 70 per

minute, and temperature was normal with no tympanites. She was given no opiate, suffered no pain after the second day and was able to leave St. Joseph's Infirmary in two weeks. She has since been well.

Case 7.—Mrs. T., from Hardin County, Kentucky; aged 32; married twelve years but never pregnant. The subjective and physical history of the case is nearly pathogenic of extra-uterine pregnancy in the broad ligament at about three and one-half months. An abdominal section was done November 19, 1889. The placenta and membranes were extensively adherent, but were easily separated without alarming hæmorrhage. The tumor was ligated at its base in the broad ligament, the ligature including the proximal and distal parts of the ovarian artery. The fœtus was developed to three and one-half months, and the membranes were unusually large. The uterus was five and one-half inches deep and adherent to the abdominal walls on the right side nearly up to the umbilicus, and three inches of small intestine were firmly bound to the walls between the uterus and the mesial line. The abdominal cavity was thoroughly irrigated and a glass drainage tube used for three days. She had no shock and was put to bed with a pulse of 80. At no time was there an untoward symptom consequent to the operation, but on the fourth day, and for a week afterward, she had an exhausting diarrhœa which was relieved when she passed several large round worms. She now began to complain of severe pressure upon the rectum and bladder and upon examination a large hæmatocele is found in the left broad ligament pressing into the pouch of Douglas. This finally suppurated and discharged into the rectum, and the patient made a slow but final recovery. It also ruptured into the tract of the drainage tube and discharged great quantities of fecal matter and gas through the lower part of the abdominal incision, but this ceased in a few weeks and in six months the fistulous opening had closed. She is now in as good health as at any time since marriage.

Case 8.—Mrs. B., Louisville; aged 28; has had one abortion; consulted me in January, 1891; gives no history of disease of the generative tract until two months ago; she then missed her period and has well defined symptoms of extra-uterine pregnancy on the right side which has probably ruptured into the broad ligament. The uterus is enlarged, pressed to the left side, and partially fixed. There is a tumor larger than a goose egg in the right broad ligament which rises out of the pelvis and can be felt by abdominal palpation. A laparotomy was done next day. The tumor was extensively adherent but was easily separated and removed; the left ovary and tube were also removed because they were so diseased as to be of no possible service and if left would probably have caused much suffering and required a subsequent operation. The abdomen was irrigated and a drainage tube used for several days. She had before the operation a pulse of 125, and temperature of 101°; the pulse ran from 125 to 140 for two days after the operation, but then fell to about 100. On the sixth day she had pelvic peritonitis which caused intense suffering and great prostration for ten days, when she began to improve and made a slow but apparently perfect recovery. She now says she is entirely well but I have not examined to see if there are pelvic adhesions or exudates. The nurse did not know my method of caring for the tube and probably caused the peritonitis by the introduction of septic matter. The specimen was an extra-uterine pregnancy of the tube which had ruptured into the broad ligament at about eight weeks. The embryo had been absorbed, but the placenta was relatively large and its character but little changed.

Case 9.—Mrs. H., Louisville; aged 23; married three years but has not been pregnant; was always a nervous woman, and often suffered pain in the right ovarian region, which gradually increased in severity after marriage and especially so at coitus and during menstruation. Has been confined to her bed for eight months. She has taken hypodermatically nearly one grain of morphia with atropia three times daily for several months, and is intensely hysterical with but little inhibitory power. Her digestion is bad, and she will eat but little unless under the influence of morphia; at other times she vomits the little she is induced to eat. She sleeps only a few hours a day; intellection is badly impaired and her pulse is irregular, ranging from 90 to 140. She has frequent seizures of hystero-neuroses the most remarkable I have seen. The capillaries of the face, and in isolated parts of the body, become so paralyzed that the surface is of nearly a scarlet flush, while the capillaries of the intervening spaces are so contracted that the surface is blanched. This condition gradually appears, lasts for a few hours, and gradually disappears, to return sometimes as often as twice daily. When the flush begins the pulse increases in rapidity and finally gets to 140, but when the flush disappears it is again 90. She is constipated. She formerly weighed 130 pounds, now weighs only 90. The uterus is retroverted and held firmly down by tough adhesions. The broad ligaments are thickened and inelastic, especially the right one, which is so sensitive that the finger pressed gently against it causes severe pain. No well defined solid tumor can be felt but there is an enlargement of some kind. A laparotomy was done February 25, 1892. The adhesions were old and so tough that it was hard to separate them. The pouch of Douglas was nearly obliterated, but the uterus was separated and lifted from the sacral cavity. The ovaries were held down by adhesions but not sufficiently diseased to justify their removal. She and her husband had asked that the ovaries be spared if possible. On the right side there was an imbedded parovarian cyst the size of a turkey egg which was enucleated and removed. Irrigation was used and a glass drainage tube kept in for two days. There was but little shock and no untoward symptom for two weeks. She took one-fourth grain morphia occasionally for a few days but the quantity was daily decreased until she was given in ten days only one-eighth grain daily. Her pulse after the operation ranged from 80 to 90 and there was no recurrence of the flush. Her mental trouble had nearly disappeared and she was walking about the room and halls of the Infirmary. On the fourteenth day she was made very nervous by an accident in her room, complained of the return of the pain on the right side and compelled the nurse and her husband to continue the morphia. The flush returned daily for two weeks, but the pulse did not go above 115. The conditions at the Infirmary were such that it was impossible to prevent giving the morphia, and as she would not improve unless this was done I sent her to her sister in Memphis, Tenn., and put her under the care of Dr. R. B. Maury, who gradually reduced the quantity, and after ten days gave her none. She returned to the Infirmary two weeks ago quite feeble, but has taken no morphia, has no flush or excitement of pulse, and her nutrition is good. She walks about the halls and in the yard. She complains of pain on the right side, but I believe this will finally disappear. The uterus is again retroverted and there may be some new adhesion, but there is no defined thickness or exudation of the broad ligaments. The ligaments were so thickened and inelastic that the uterus could not be brought high enough to admit of hysterorrhaphy, but this could probably be done now if another operation becomes necessary.

Case 10.—Mrs. W.; Eminence, Kentucky; aged 30; widow; has never been pregnant; has suffered for several years with some uterine or pelvic trouble and says she has had a pelvic pus cavity aspirated through the vagina twice with some temporary relief; has constant severe pelvic pressure and pain, and is seldom free from intense headache. Her menses are irregular and profuse. The uterus is pushed toward the left side and is nearly immovable, and on the right side there is a hard tumor the size of a large orange that seems to be blended with the uterus. A laparotomy was done in October, 1889; the tumor was held tightly in the pelvis by strong bands of adhesions and appeared to be connected with both uterus and bladder by continuity of tissue. When the adhesions were separated the upper part of the tumor rose two inches out of the pelvis and could be plainly seen and carefully examined. Its surface was of a dark venous color, and it was a typical case of deeply imbedded broad ligament cyst probably arising from the hilum of the ovary. The conditions were such that its entire removal would have been practically impossible, and as the contents of such tumors are often malignant or semi-malignant, it would have been bad surgery to have attempted its partial removal and incurred the risk of allowing some of the contents to come in contact with the peritoneum; besides these are the cases that die of hæmorrhage and shock on the table or soon afterward. Believing that the distressing pelvic pressure would be greatly lessened by the removal of the adhesions, I left the tumor and closed the abdomen expecting to watch the progress of the case, and to finally attempt its removal if it continued to grow and jeopardize the life of the woman. Her recovery was rapid and she has been much improved in health, and feels that she is well enough to again marry. The tumor is not so hard or fixed and is not as large as when the operation was done. The pain and inconvenience from pressure are greatly improved as is also the headache.

Case 11.—Mrs. W.; near Brandenburg, Kentucky; aged 40; married and has several children, the youngest three years old; she is anæmic and sallow; has complained of

some pain and pressure in the region of the uterus for six months, but for three months the pain on right side has been so severe that she has been most of the time confined to her bed and has lost considerable flesh. She has not missed her menstrual period until three months ago; since then menstruation has been irregular. The uterus is fixed and there are hard exudates on each side; it is the size of a large orange and reaches on the left side above the pelvic brim. An exploratory laparotomy was done on March 27, 1892. A band of omentum nearly as wide and thick as the hand was attached to the right broad ligament in the region of the severe pain. It was ligated in two places and divided. The enlarged uterus and the exudates in the broad ligaments were united in one solid malignant mass. No part of the peritoneal surface of the intestine was adherent to the tumor, but the enlarged uterus, with its neoplastic surroundings, had insinuated itself under the sigmoid flexure of the colon, which was attached by its mesentery entirely across the anterior part of the uterus and apparently entered the pelvis on the right side. This peculiarity was positively distinct, and was carefully examined by several of the assistants. This was a condition that I had neither seen nor heard of, and I will not attempt an explanation to show how the uterus and tumor got under the bowel. She had no pain after the operation, took no morphia, had a normal pulse and temperature, and went home, a distance of fifty miles, in two weeks. She has had no pain since and has gained in flesh, but of course the growth will continue to increase and will eventually kill her.

Case 12—Mrs. P.; of Bowling Green, Kentucky; aged 65; widow and has four children; has noticed a tumor in the left inguinal region for nearly twenty years, but it never grew rapidly or caused much inconvenience until the last three years. The tumor is twice the size of a pregnancy at term and causes disturbance in respiration. The history of the case and the physical signs indicate a typical ovarian cystoma. A laparotomy was done the first of May, 1892, and a multilocular cyst with feeble adhesions removed without getting any of its contents in contact with the peritoneum. The removal of the tumor, thorough irrigation of the cavity, and closure of the abdominal incision, was done in fifteen minutes. She has had no pain, has taken but one grain of morphia, and has made a perfect recovery, with normal pulse and temperature. She returned home in sixteen days and is in better health than she has been for ten years.

Case 13.—Miss P.; Ashland, Kentucky; aged 24; has been stout until six months ago; she then had a feeling of weight and some pain on the left side of the abdomen and detected a small enlargement. She thinks the enlargement began just below the short ribs, but her physician afterward examined her and thought it began lower down. It gradually increased and she began to lose flesh rapidly but at no time had any fever nor was there any disturbance of the function of the kidney or any abdominal viscus. For three months the tumor could be traced from the short ribs to the pelvis, and the left buttock is enlarged to twice the size of the right. The uterus is retroverted and the tubes and ovaries are bound down by adhesions, but the tumor cannot be felt in the vagina. It is nearly immovable, and by palpation and percussion the outlines show that it extends from under the ribs to the pelvis and within one inch of the mesial line. It causes lateral bulging of the abdomen, is apparently cystic, but percussion in front of the anterior superior spinous process of the ilium does not exclude the possibility of an intervening bowel. A laparotomy was done at Ashland, May 8, 1892. As it was impossible to tell the nature and conditions of the tumor and its relation to the bowels or other abdominal structures without an exploratory incision the abdomen was opened in the mesial line. The adhesions of the tubes and ovaries were separated and the uterus lifted out of the sacral cavity. The tumor was extra-peritoneal, and the wall protecting it from the peritoneal cavity was thick and extensively adherent to the omentum. It extended from a little below the pectineal line in the pelvis to above the kidney, but that organ was not involved; posteriorly it extended to the spinal column and anteriorly to midway between the iliac bone and the mesial line. The abdominal wound was closed and a vertical incision two inches long was made an inch in front of the anterior superior iliac spinous process. A half gallon inodorous, thin, milky looking liquid was discharged, the nature of which it was not possible to tell without a microscopical examination which could not conveniently be had. The cavity extended further than the finger could reach below and above. There were some connecting bands which were broken, but the general conditions were not such as are usually found in a pus cavity. It was evidently some kind of extra-peritoneal cyst the cause and nature of which I do not know. The cavity was thoroughly irrigated with a bi-chloride of mercury solution, and some matter similar in appearance to brain substance washed out. Two gum drainage tubes were sutured in the angles of the wound, one dipping to the bottom of the sac and the other going up to the kidney. The cavity was irrigated twice daily with the bi-chloride solution, but only a little drainage except the liquid injected was noticed, and there was no pus. After a few days there was no discharge and the water injected came away clear. The cavity is contracting rapidly and will soon be obliterated and the wound closed. The operation was followed by no untoward symptom, her pulse and temperature remaining about normal. The bowels moved freely in forty-eight hours without medicine and each day since. She ate heartily after this and is gaining flesh and strength.

Case 14.—Mrs. S.; Louisville; aged 40; married and has one child, aged twenty-one; two years ago she was treated for typhoid fever, but entirely recovered and remained well until four months ago; since then she has suffered severe pain in the region of the right broad ligament which has continued to grow worse; she is very anæmic and so emaciated that she weighs not more than ninety pounds; her digestion and nutrition are bad, and her legs are constantly cold and covered with clammy perspiration; she has a temperature of 101° and a pulse of 110 to 120. The uterus is fixed by a tumor in the right broad ligament. There is no disease in the left broad ligament, ovary or tube. Her condition was so critical as not to admit of temporizing treatment, and though very feeble an immediate laparotomy was decided upon. She was operated on August 24, 1891. There was but little disease of the left ovary and tube and they were not removed, but on the right side of the uterus there was a tumor the size of a goose egg, in which the ovary and tube were so imbedded that they could not be distinguished by the sense of touch. A coil of the ilium was firmly adherent to the tumor and when separated the adherent surface was so unhealthy and weak in appearance that I sutured the bowel and united the peritoneum to peritoneum. In an attempt to enucleate the tumor the tissues were so rotten that the ovary and tube and a great quantity of matter similar in appearance to brain structure were easily removed without the necessity of using a ligature. There was no pus or liquid and the enlargement was probably caused by tubercular deposit. The cavity was irrigated and a glass drainage tube used for two days. The operation was completed in thirty minutes and she was put to bed with a pulse better than when she went on the operating table. She made relatively a good recovery and her temperature and pulse were not as high at any time after the operation as before it. A mural abscess formed on the fifth day in the line of the incision caused by carelessly leaving bruised and lacerated muscle in the wound. The legs were warm in twelve hours after the operation and there was no more clammy perspiration. She was able to sit up in two weeks and left the Infirmary a few days later. She has entirely recovered, suffers no pain and weighs 140 pounds.

Case 15.—Mrs. L., Louisville, aged 30; married and has three children, has been well until one year ago; since then she has suffered with severe pelvic pain and has been treated for pelvic peritonitis; she has gradually gotten worse and is now emaciated, feeble, digestion bad, bowels constipated, suffers almost constant severe pelvic pain, and is confined to bed. The uterus is fixed and hard exudates are felt in both broad ligaments and low down in the pouch of Douglas. A laparotomy was done at the Infirmary December 4, 1890, and both appendages separated from firm adhesions and removed. In the right ovary there was a cyst the size of a hen egg. The extensive hard exudation in the base of the broad ligament and in the pouch of Douglas could not be removed, and seemed to be incorporated into the tissues of the uterus and surrounding structures. I suspected the trouble was malignant. A glass drainage tube was used for two days. She made a good recovery from the immediate effects of the operation and returned home in about two weeks practically relieved of pain and in every way feeling much improved. The broad ligament and retro-uterine exudates increased and my diagnosis of malignant disease was confirmed. The disease is now extending rapidly and she will probably not live through the coming summer.

Case 16.—Miss N., Louisville; aged 24; has had for several years some pain in her pelvis, and disturbed uterine function; was treated one year ago for excessive

flooding, lasting two months; since then she has constantly suffered so severely in the region of uterus and ovaries that life has become a burden, and she begs to be operated upon. The uterus is retroverted and adherent, and tough adhesions are felt in each broad ligament. A laparotomy was done April 8, 1891. When the adhesions were separated and the uterus and its adnexa exposed, the tubes and ovaries were found to be of no use, and were removed. There was considerable oozing and a glass drainage tube was used for two days. Her recovery was uninterrupted and she left the Infirmary in two weeks. She has had no pain in pelvis since and her health is perfect. She walks as much as two miles without inconvenience. Her menses have not returned.

Case 17.—Mrs. C. (colored); Louisville; aged 42; married and has had children but none living; has had irregular menstruation with menorrhagia and great pain in the uterine region for several years which caused her to be confined to bed six months ago, for three months; is now able to walk a few squares but is in nearly constant pain. The uterus is fixed and solid exudations can be felt in the right side. There is not much thickening in the left side. A laparotomy was done at the City Hospital September 1, 1889. In enucleating the right ovary and tube the fingers opened a small cavity connecting with the bowel by a sinus. A fecal odor was well marked but the opening in the bowel was too small to be detected and no fecal matter escaped. The left ovary and tube were not disturbed. The cavity was irrigated and a glass drainage tube introduced to the deepest part of the excavation caused by the separation of adhesions. She had no shock and did well for two days, but the liquid removed from the tube had an offensive odor. I put her under the care of the visiting surgeon and left the city for four days. On the third day, and afterward, the discharge from the tube was still offensive and had become purulent. Her temperature rose to 103°, but she had no symptom of more than local infection and inflammation. The tube was used for two weeks and large quantities of offensive pus removed. The temperature and pulse were now normal. Pus continued to discharge through the tube opening at the lower angle of the wound but it gradually grew less in quantity, the bad odor disappeared, and at no time was there any fecal matter. After a few weeks she was able to leave the Hospital and has continued to improve and is now free of pain, has no menorrhagia, and can walk four miles without causing pain or fatigue. The sinus discharged pus for over a year but finally closed without treatment. This is the only Hospital or colored patient included in this report.

Case 18.—Miss S., Cincinnati, Ohio, aged 26, has not been well for several years, but for a year has suffered nearly constant pain on the left side of the uterus which extends down the left leg and causes lameness. A variety of treatment has done no good. She is very lean, nervous and anæmic, and is able to do but little work. The uterus is retroverted and fixed, and the left ovary and tube adherent and diseased. A laparotomy was done August 5, 1891. The adhesions were separated and the uterus restored to its normal position. The left ovary was destroyed by a cyst and the cavity of the tube obliterated. Both were removed and the uterus was sewed to the peritoneum above the pubes by introducing a heavy silver wire through the thickness of the abdominal wall on each side of the incision including the broad and round ligaments. The right appendage was not removed. With the exception of some stitch abscesses she made an easy recovery. The silver wires were removed on the seventh day. She left the Infirmary in three weeks; she suffered for a few months some pain in the side and leg, but it gradually disappeared and she is now perfectly well. The uterus is still adherent to the anterior abdominal wall, but is otherwise movable, and there are no pelvic adhesions.

Case 19.—Mrs. C.; New Albany, Ind.; aged 28; married and has two children; is extremely nervous, which is increased at the menstrual period; has constant pain in the pelvis and back, and suffers from pressure upon the rectum and irritation of the bladder. The womb is retroverted and adherent but the ovaries and tubes are not much diseased. She and her husband insisted upon the removal of the adnexa, which I declined to do but consented to do a laparotomy, separate the adhesions and fasten the uterus in front. The operation was done June 9, 1891. The adhesions were separated and the womb, ovaries and tubes inspected. The tubes were perfectly healthy, but the ovaries were abnormally cystic and twice the usual size. The cysts were punctured and the ovaries reduced one-half in size. Silver wire sutures were introduced on each side of the uterus through and under the broad ligaments, including the round ligaments, and tied externally nearly one inch from the abdominal incision. Recovery was prompt, but the silver sutures were not removed for two weeks. The uterus was firmly united to the peritoneum and has remained so. Her condition was in every way much improved and the position of the uterus, as in the preceding case, has caused no inconvenience. She is now pregnant five months. I now treat these cases by sewing the round and broad ligaments to the uterus, or to the peritoneum of the anterior abdominal wall.

Case 20.—Miss S.; Louisville; aged 34, has for many years had painful menstruation and has suffered constantly and sometimes severely, with pains in the uterine region; has been very nervous, with various reflex troubles, and is now and has often been so intensely hysterical that it amounts to practically a species of insanity. Micturition is frequent and painful, and the bowels constipated; her digestion is bad; she is very anæmic and emaciated, and eats and sleeps but little. She has been treated several times for pelvic peritonitis; has been confined to bed for several months. Electricity has been used but she says it always increased her suffering and made her worse. The uterus is retroverted and firmly fixed in the pouch of Douglas, with adhesions on the sides. Her pulse is 120 and feeble, temperature 101°. A laparotomy was done in October, 1889. The adhesions were separated and the uterus restored to its normal place. The ovaries were not enough diseased to justify removal. Before I had time to suture the uterus to the abdominal wall the anæsthetizer and my assistant urged that I close the abdomen immediately because her pulse was very feeble and rapid. I did so, but very soon saw that the operation could easily have been completed. She continued so nervous, and her mind was so disturbed, that she could hardly be kept in bed, and we were compelled to give several hypodermic injections of $\frac{1}{8}$ grain of morphia. Considering her feeble condition and conduct, she made a very good recovery; but for nearly a week, after the fifth day, she had a fever of 101° to 103° caused by several stitch abscesses. After two weeks, she improved nicely, ate and slept better and grew less nervous. Nearly all the symptoms of insanity disappeared. Within two months she was in better health than she had been for many years, and began to gain flesh rapidly. She was finally able to walk several squares, and is in comparatively good health. She has just recovered from typhoid fever, and has been in bed most of the time for six weeks with some of the symptoms of the old trouble. The uterus is again retroverted and is probably adherent. If she does not improve I will do another operation and sew the uterus to the abdominal wall with kangaroo tendon.

Case 21.—Mrs. V.; Louisville; aged 40; widow with one child; has been very nervous for several years and suffers with constant severe pain in the head and in the pelvis, which causes distressing reflex and hysterical disturbances. The symptoms are worse at the menstrual period. She is a constant invalid; spends much of her time in bed and seldom leaves the house. It is nearly impossible for her to walk a square because of the pain it causes in the region of the uterus, lower part of the abdomen and the back. She has been treated for several years by an excellent physician but has only been temporarily improved, and he does not believe she can be cured without a laparotomy. The uterus is not displaced, the ovaries are enlarged to twice the normal size, and tender, and there is a cystic tumor on the right side the size of a hen's egg. A laparotomy was done October 6, 1890, at St. Joseph's Infirmary. The fat over the abdomen was nearly four inches thick, but the operation was completed without difficulty, ovaries, tubes and a parovarian cyst being removed. The tubes were normal, but the ovaries were cystic, and the outer covering had become thickened and hard from chronic ovaritis. She made an uninterrupted recovery and returned home in a little over two weeks. Occasionally she would have pain in the pelvis and reflexes, but this gradually disappeared and she has now no trouble in that particular and is attending regularly to her art duties. There has been no return of menstruation. Had this woman been younger I should probably have punctured the cysts in the ovaries instead of removing them, for it is our duty never to sacrifice these organs, especially during the fruitful period of a woman, if she can be cured without it.

Case 22.—Mrs. C.; New Albany, Ind.; aged 35; married but has no children. Has had for several years intense pain in the inguinal regions, with a constant sense of pressure or weight in the pelvis, and well marked reflexes. These symptoms are much worse at the menstrual period. She has been treated by several physicians but has gradually grown worse and begs to have the ovaries removed. The uterus is too large, but otherwise normal; the tubes are not diseased,

but the ovaries are twice the normal size and very tender. A laparotomy was done September 2, 1890, and the ovaries and tubes removed. The ovaries were in a state of well marked so-called cystic degeneration, and the outer tunic was thick and tough, caused by chronic ovaritis. She left the Infirmary in sixteen days having made an uninterrupted recovery. For six months after the operation she occasionally had some pain in the inguinal regions caused by hard work, but this finally passed away and for a year she has been perfectly free of all the symptoms for which the operation was done and is one of the most grateful patients upon whom I have operated. She has had no return of her menses.

Case 23.—Mrs. R.; Louisville; aged 44; married and has one child, aged 22; has been for many years a very nervous and sometimes peculiar woman. She fell and hurt herself in Chicago four years ago and dates her present trouble from that fall and has gotten gradually worse. Her bowels are constipated, appetite bad, and she sleeps not more than two or three hours daily. Menstruation is regular and her mental trouble is worse at that time. She wants me to remove the uterus, ovaries and tubes. The uterus is normal, but the ovaries are more than twice the average size. She is an insane woman. The ovaries and tubes were removed October 27, 1890. In size and pathological significance the ovaries were in a condition similar to case 22. She recovered nicely and left the Infirmary in fifteen days. She was much improved and her mind was not so easily disturbed, but she still complained of some pelvic reflexes, and insists that the uterus be removed. She gradually improved and in six months had practically regained her physical and mental health.

Case 24.—Mrs. T.; Central Kentucky; aged 22; married two years but has no children; was a robust girl weighing 140 pounds until one year before marriage and had never had any trouble with menstruation or pains at any time in the uterus or ovaries. Since then she has seldom been free of pain in pelvis and sometimes very severe, which is usually worse during menstruation. Since marriage the trouble has continuously grown worse and she now weighs about 100 pounds. She has no desire for coitus, and it is always painful. She has been treated by one of the best physicians of the State but has not improved. She is often confined to bed, is seldom able to attend to her domestic duties, and is fast becoming a chronic invalid. Her appetite, digestion and nutrition are bad. The uterus is not diseased, but the ovaries are enlarged, and very sensitive to pressure. Her husband and his father, two excellent physicians, and an excellent surgeon of Louisville, concurred in the opinion that the appendages should be removed. The operation was done November 16, 1889. The tubes were healthy but the ovaries were in a state of chronic inflammation. The ovarian or pelvic pain was not felt after the appendages were removed. She had no untoward symptom and begged to be allowed to sit up after the fourth day saying she had not felt so well for three years. She went shopping on the thirteenth day and returned home, a distance of sixty-five miles, in two weeks. She has been practically relieved of the old trouble, her nutrition is better, and she now enjoys coitus. Her menstruation has occurred a few times. I do not, however, consider that the operation has entirely cured her, and probably she could have been gotten about as well without the removal of ovaries and tubes, had she been willing to submit to treatment such as may be practiced in special hospitals or infirmaries, where isolation, massage, electricity, special diet, etc., may be rigidly enforced.

Case 25.—Mrs. T.; Chicago, Illinois; aged 28; married and has two children, the youngest one year old; has been a nervous and neurasthenic woman with but little inhibitory power; has always had dysmenorrhœa and has often been hysterical and had pain in the pelvis at other times. Since the birth of last child the symptoms have progressively increased in severity and she is never without pain and nervousness and sleeps but little; she is constipated and has indigestion. A variety of treatment has given but temporary relief; the uterus is one-third too large, but not otherwise diseased; there are no pelvic adhesions or exudates, but the left ovary is three times and the right one twice the normal size and very sensitive to pressure. The appendages were removed November 18, 1889. The tubes were not diseased, but the ovaries were the size described above, the outer layer thick and tough, and in a condition of cystic degeneration. She recovered nicely and left the Infirmary on the eighteenth day. She was very well for some months after the operation and is now much better than before it; but she still suffers pain in the pelvis and is nervous. While the operation was an immediate success, the subsequent results were not entirely satisfactory. The operation was probably the best thing that could have been done, and she may finally get well, but the result might have been just as good without removing the appendages. She has menstruated a few times and has gotten quite fleshy.

Case 26.—Mrs. H.; aged 25; a widow with no children; is very thin, her appetite poor, digestion bad, and nutrition not good; she is never without pain, and suffers intensely at menstrual period, which is very scant. She has been treated by one of our best physicians for a long while but has not improved. The uterus and tubes are normal, but the ovaries are about half the proper size and hard and sensitive. The appendages were removed October 3, 1890. The tubes were short and small but healthy, while the ovaries were contracted and cirrhotic. She left the Infirmary in two weeks, has had but little pain since, is not so nervous and her nutrition is improved. She is not cured, but has been very much benefited by the operation.

Case 27.—Miss H.; Moberly, Indiana; aged 30; has for many years been very nervous; has had constant pains in the pelvic structures; her menses have been regular, but scant, and she has had very severe dysmenorrhœa. She is very lean and anæmic, and her symptoms are getting gradually worse. The uterus is healthy, but the ovaries are very small and hard. The adnexa were removed May 22, 1891. The tubes were about two-thirds the usual size but not otherwise abnormal. The ovaries were about half the normal size and very hard. She had no untoward symptom except some troublesome stitch abscesses which were annoying and caused two degrees of fever. She returned home from the Infirmary in three weeks looking and feeling better than for two years. She still has some pain, but her nutrition and general health have improved. She weighed before the operation about ninety pounds; she will now weigh 125.

Case 28.—Miss D.; New Albany, Indiana; aged 32; has suffered with irregular and painful menstruation for ten years; has been very nervous and has had frequent attacks of epileptiform convulsions which her physician and family believe to be largely due to ovulation. She is very lean, and appetite, digestion and nutrition bad. Her skin is often, and hands and feet constantly, covered with cold, clammy perspiration. The uterus and ovaries are not displaced, or bound by adhesions, but are too small. There is but little tenderness in the uterus or the broad ligaments. I was urged by her doctor and father to remove the appendages as all other known means had failed to do any good and if this did not cure the convulsions it would probably so improve her nutrition and general health that other remedies might then act more efficiently. After explaining that the removal of the ovaries and tubes would probably not improve the patient's condition in any way I consented to do the operation. A laparotomy was done November 17, 1891. The tubes were healthy, but the ovaries were small and cirrhotic, and incapable of performing a healthy function. Her circulation and nutrition were improved in three days after the operation, and she left the Infirmary on the twentieth day. She is now much improved, but still has convulsions and I doubt if she will be entirely relieved.

Case 29.—Miss D., Louisville, aged 28, has been a great invalid and very nervous for ten years; has taken large doses of morphia hypodermatically, but has been cured of the habit and takes none now. She is fleshy, but the flesh is not solid. Her nutrition is not good, inhibitory powers very feeble. She suffers with some pain in the pelvis all the time, but it is much worse at her period. She has been treated by several learned physicians, but has been only temporarily improved. Her physician and family requested me to remove the appendages, believing that most of her trouble is due to, or kept up by, the intense dysmenorrhœa. The uterus is in a normal condition, but the ovaries are small and hard. The operation was done February 17, 1892. The ovaries were cirrhotic with comparatively few normal follicles. There were no adhesions and the tubes and uterus were healthy. She made an uninterrupted recovery but did not leave the Infirmary until the twenty-first day. She has improved regularly since the operation and is in better health than for several years, but is not well, and the operation may not cure her.

Case 30.—Miss L., Louisville, aged 26; a lady of excellent intellect, and good literary attainments; was in good health until five years ago; since then she has had dysmenorrhœa, severe and nearly constant pain in the regions of the ovaries, in the back and in the head, which has continued to get worse, and now she is much of her time, confined to bed; is nearly in a state of chronic invalidism. Her

nutrition is becoming impaired, her inhibitory powers greatly weakened, and the reflexes apparently from the uterus or its adnexa are well marked, especially just before, during and just after her menses. She has been treated by excellent physicians here and in other parts of the country and has spent much time at the sea shore and various health resorts but has been only temporarily benefited. The uterus and tubes appear to be relatively healthy, but pressure upon the ovaries causes severe pain. From the subjective and physical symptoms chronic ovaritis is diagnosticated, which if not the original cause of her disease is now an important factor in preventing a cure. I was employed upon the advice of her physician to remove the appendages which had been advised by one or more well known surgeons in other cities, and she and her family wanted the operation done. Under these conditions I agreed to do the operation but could not give an encouraging opinion that it would cure all her symptoms. A laparotomy was done on October 10, 1891, the ovaries were indurated and a little contracted. They were carefully examined microscopically and found to be cirrhotic with the outer layer thickened and indurated from chronic ovaritis. She recovered from the operation nicely but did not get out of bed for over two weeks and did not leave the house for over four. She had some pain in the pelvis and headache, but all this nearly disappeared when she began going about. She is in better health than she has been for several years. She spent several months in the south and returned feeling very well with but few of her old symptoms. She has since been imprudent and her physician informs me has had a severe attack of supra-orbital neuralgia which continued for a week. Her nutrition and general condition are much improved, and she will probably regain her health, but this might have been accomplished without the removal of the appendages had she been confined for a long time in a well regulated sanitorium with a systematic course of treatment, such as diet, massage, electricity, etc., which could have been rigorously enforced; but, neither she nor her parents would have consented to this.

Case 31.—Miss K., Louisville; aged 24; has had since sixteen years old intense dysmenorrhœa with distressing reflexes at each period, which has made her nearly a constant invalid; she has been treated by physicians of large experience in such cases, and her cervix has been dilated. She has occasionally been a little improved but very soon relapsed. Has continued to get worse; the ovaries are very small and indurated. The appendages were removed April 18, 1892. She made an easy recovery and left the Infirmary in two weeks, in better health and more cheerful than she had been for several years. She called at my office four weeks after the operation feeling well and happy. I believe she will be permanently cured, for all her suffering seemed to have its origin in the disturbed menstruation.

THE RATIONAL TREATMENT OF TYPHOID FEVER.

A paper read before the Ohio State Medical Society, at Cincinnati, May 5, 1892.

BY F. W. LANGDON, M.D.

Mr. President and Fellow-members of the Ohio State Medical Society: The subject of fever—in its general aspect—has been deemed worthy of so much labor and study on the part of the physiologist, the pathologist and the clinician, and is of such practical import to all who practice our art in any of its branches, that no apology is necessary, I trust, for bringing one of its numerous phases before this society for consideration.

Looking at its most constant and evident symptom—the pyrexia—the physiologist points out, and the pathologist, and clinician confirm the probable existence of heat-producing, heat controlling and heat dissipating areas, situated in the central nervous system, and influencing by their abnormal action the production of this particular symptom.

That the pyrexia, however, does not constitute the disease is quite evident, since it may be absent, controlled or even eliminated, and yet the patient be far from well.

While, then, we are in ignorance, to a considerable degree, respecting the ultimate nature of the pathological phenomena of fever in general, we may accept as true, the dictum of Fordyce in his classic "Treatise on Fever" (p. 16), that it is "a disease of the whole system in every kind of sense," in other words a general disturbance of the entire organism, having for its prominent and most constant symptom elevation of the body temperature. It is unnecessary for the purpose of the present remarks, to discuss in detail questions relating to etiology, pathology, clinical history, or diagnosis of typhoid fever: suffice it to say, by way of introduction to the subject of treatment—that I accept the hypothesis of its bacterial origin, as being more in accord with observed facts than any other; the media of conveyance of the bacteria to the human subject being contaminated water or milk—perhaps occasionally raw vegetables, fruits and dust.

I do not believe it ever results from foul gases of any kind in which the typhoid bacilli are absent. I would as soon expect an apple tree to develop from April showers and sunshine!

The facts that the source of infection is not always traceable, or that cases occur sporadically, in isolated localities and individuals, does not, to my mind, militate against the bacterial hypothesis. When the mycologic botanist shall have mapped out the normal geographical distribution of the various bacterial organisms, with as much certainty as his brother now outlines the limits of the oaks, the pines and the grasses—then we may be enabled to account more definitely for the occurrence of these apparently inexplicable cases.

As regards the pathology, it seems to me probable that the bacilli enter the body through the alimentary canal; that they here proliferate and give rise to the production of one or more ptomaines; which, absorbed and distributed through the blood and lymph streams, cause the wide-spread impairment of function and structure which characterizes the disease.

Further, that in certain of the more active lymphatic structures of the small intestine (Peyer's patches and solitary glands) the bacilli themselves gain access or are absorbed; that their proliferation here gives rise to thrombosis with resulting necrosis, thus producing the well-known phenomena of tumefaction and ulceration of these organs.

Respecting the pyrexia, I regard it as probably the re-action to irritation (by the ptomaines) of nerve centres concerned in thermo-genesis, thermotaxis or thermo-lysis. Other nervous symptoms, e.g., muscular and mental delirium, coma, arythmic circulation, neuralgias, pareses and paralyses, are very likely produced by the same toxic agency, acting at times centrally, again peripherally and often reinforced or intensified by retention of excretory products of tissue metamorphosis.

Respecting diagnosis it is sufficient to say, that typical cases are unmistakable to the experienced observer, while atypical ones are often extremely puzzling, and the patient must be given the benefit of the doubt, a diagnosis being arrived at by exclusion.

Of the *indications* for treatment it may be said that they are not less than five in number, viz.:

1. To sustain the patient.

2. To remove or abate the cause of the disease so far as practicable.

3. To avert, control or alleviate dangerous or distressing symptoms and complications (e.g., headaches, insomnia, neuralgias, high temperature, intestinal hæmorrhages and perforation, bronchitis, pneumonitis, cardiac degeneration, thrombosis, abscesses, etc.).

4. To promote removal of products of tissue oxidadation by excretory channels, viz., skin, kidneys, lungs, bowels.

5. Prophylaxis.

The *measures* by which these indications are fulfilled to a greater or less degree may be considered under two heads, namely:

1. Hygienic and prophylactic.

2. Therapeutic.

With respect to the former there is a general consensus of opinion which does not pertain to the latter. Given a well-ventilated, sun-purified room, two beds, elastic and neither hard nor soft, a nurse who is discreet, observing, and above all, obedient; add a well-selected liquid diet containing a minimum of nitrogenous principles and the typical conditions of hygiene are fulfilled. Without these therapeusis is likely to be "a delusion and a snare" whatever may be the particular plan of treatment adopted.

Respecting *plans* of therapeutic treatment, the most prominent requiring notice are:

1. The *expectant* or symptomatic plan; which has been uncharitably called the nihilistic plan, in that it abolishes all attempt to treat the disease and confines the treatment to individual symptoms.

2. The *antipyretic* plan which by hydro-therapeutic or medicinal measures addresses itself entirely to keeping the pyrexia within certain limits.

3. Antimycotic or anti-zymotic plan, e.g., calomel treatment, called "specific" by Liebermeister and others; the carbolic acid and iodine treatment of Bartholow, Wilson and others also belongs in this category.

The *expectant* plan of treatment makes no attempt to eliminate or abate the activity of the cause; hence I reject it as unscientific in theory and unsatisfactory in practice as compared with other methods.

In the light of our present knowledge of bacteriological chemistry, I would about as soon think of treating a case of syphilis or of diphtheria, or an abscess on the expectant plan as a case of typhoid fever. Even in mild cases, running an apparently favorable course, I think it probable that a judicious therapy directed to the cause may often lessen complications and the tendency to relapse. The *expectant* plan is comparable perhaps to an attempt to sail a rudderless ship through a narrow and dangerous channel, "expecting" to strike some rocks, but hoping with the aid of the pumps and favorable winds to guide the vessel safely into port. Far better, to my mind, is the adoption of some kind of temporary steering apparatus, even if imperfect, whereby as many rocks as possible may be avoided.

The *antipyretic* plan of treatment has been strongly advocated and statistically supported, especially the "cold bath" (64° to 68° F.) method of Brand. Objections to it are its impracticability outside of hospitals—and the fact that it is not devoid of danger from shock or fright in some cases. It undoubtedly has merit aside from mere antipyresis, as, for instance, in favoring elimination of toxic matters, products of retrograde metamorphoses, etc., through the cutaneous emunctories. As warmer water (80° 85° F.) would be at least equally efficacious in these respects and less objectionable in others, a comparison of the two on a large scale would be very desirable.

We may concede to hydro-therapy therefore, a useful position in the symptomatic treatment of the disease. As regards antipyretic treatment by drugs, it is undoubtedly useful within certain limits, in cases where the pyrexia is a special element of danger, but is at least uncalled for in the average typical case.

It must be conceded also that there is no absolutely safe antipyretic applicable to all cases; nor need we look for one, since the value of remedies bears a direct relation to their power over the organism, and power usually means power for evil as well as for good, according to its manner and place of use. In other words, most remedies which diminish temperature are in one sense, protoplasmic poisons, the difference between them being mainly in the intensity of effect on different tissues.

Antipyretic treatment therefore, is to be regarded as a choice between two evils, it may serve a useful purpose by putting on the brakes to slow excessive speed, but care must be taken that it does not stop the train or throw it off the track.

It may not be out of place here to call attention to the fact, that in one class of cases characterized by excessive pyrexia and extreme feeblenesss of pulse, with ataxia and great rapidity (150-160 and upwards), extreme caution should be exercised in the use of antipyretics as such. In these cases it has seemed to me at times, that the thermo-toxic or heat co-ordinating centres had "lost their grip" over the heat producing centres, the natural brakes are taken off and the machinery of heat-production is running wild, like an engine without a governor. Here the indications are plainly to avoid all depressants and support the controlling nerve centres by digitalis, strychnia, trinitrin and alcohol, pushed boldly to their physiological limits. To sum up the position of the antipyretic treatment, either by hydro-therapy or by drugs, it may well fulfill certain symptomatic indications but is to be criticised in that it does not meet the rational indication for removal or abatement of the cause.

Thirdly, the anti-mycotic plan of treatment claims our attention. Here may be placed the calomel treatment (after the "specific" plan of Liebermeister and others), where eight grains are administered three or four times a day for two days, *before* the ninth day of disease.

The carbolic acid and iodine treatment of Bartholow and Wilson are also steps in the direction of anti-mycotic therapeusis; and the same may be said of the use of turpentine, naphthaline and other agents.

Of the calomel treatment in the dosage mentioned it may be said that it is unnecessarily heroic; but it is a well-known fact that many practitioners of large experience and excellent judgment place great confidence in the continuous administration of calomel in small doses (gr. $\frac{1}{10}$ to $\frac{1}{4}$) three or four times daily throughout the disease. Such favorable opinion, based on wide experience and arrived at simultaneously by so large a number of competent observers, should not be disregarded; and viewed in the light of modern bacteriological science is to be looked upon as a therapy addressed to the cause; and this is

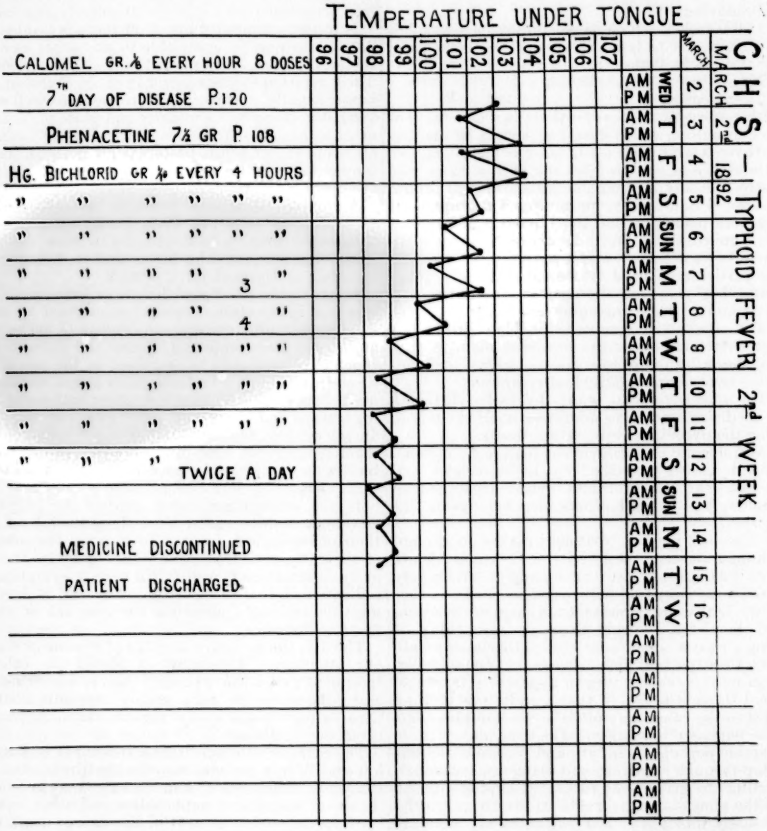
true whether we regard the calomel as a chologogue or as a factor in the production of bichloride of mercury—in either event, intestinal antisepsis is favored.

As the chemical reaction necessary to produce the bichloride salt is at least uncertain during the febrile state and the chologogue action perhaps equally so, I have been led to think favorably of the administration of the bichloride itself direct, with a view to intestinal antizymosis; and the results attained have appeared to me so satisfactory that I have been requested to place the treatment on record before this society with a view to its more extensive introduction into practice.

While occasional references to this method of treatment have appeared in the journals, I cannot at present recall dates and authors.*

My first extended experience with it was during the typhoid epidemic of 1887-8 in Cincinnati, when I administered it to about thirty-five consecutive cases. Of these, the only fatal case was in a young man who walked into my office, having had a free intestinal hæmorrhage, and following it, had ridden twelve miles in a buggy. He died in four days with repeated small hæmorrhages and profound nerve-toxic symptoms. Owing to the more urgent need of attention to the hæmorrhage and other symptoms, he did not receive the bichloride treatment; hence the record of the bichloride treatment during that epidemic stands thirty-four cases without a death. Since then my record is sixteen cases with no deaths, making a total of fifty consecutive cases without result.

My experience with this plan of treatment has been eminently satisfactory, though I have seen relapses occur two or three times. I have been led to think that relapse was favored by too early discontinuance of the treatment, and have therefore, adopted the plan of continuing the bichloride for a period of ten or twelve days following the subsidence of pyrexia, with a view to the prevention of auto-infection. I


TEMPERATURE UNDER TONGUE
C H S — TYPHOID FEVER 2nd WEEK
MARCH 2nd 1892
CALOMEL GR. ⅛ EVERY HOUR 8 DOSES
7TH DAY OF DISEASE P.120
PHENACETINE 7½ GR P 108
HG. BICHLORID GR 1/20 EVERY 4 HOURS
TWICE A DAY
MEDICINE DISCONTINUED
PATIENT DISCHARGED
96 97 98 99 100 101 102 103 104 105 106 107
MARCH
WED T F S SUN M T W T F S SUN M T W
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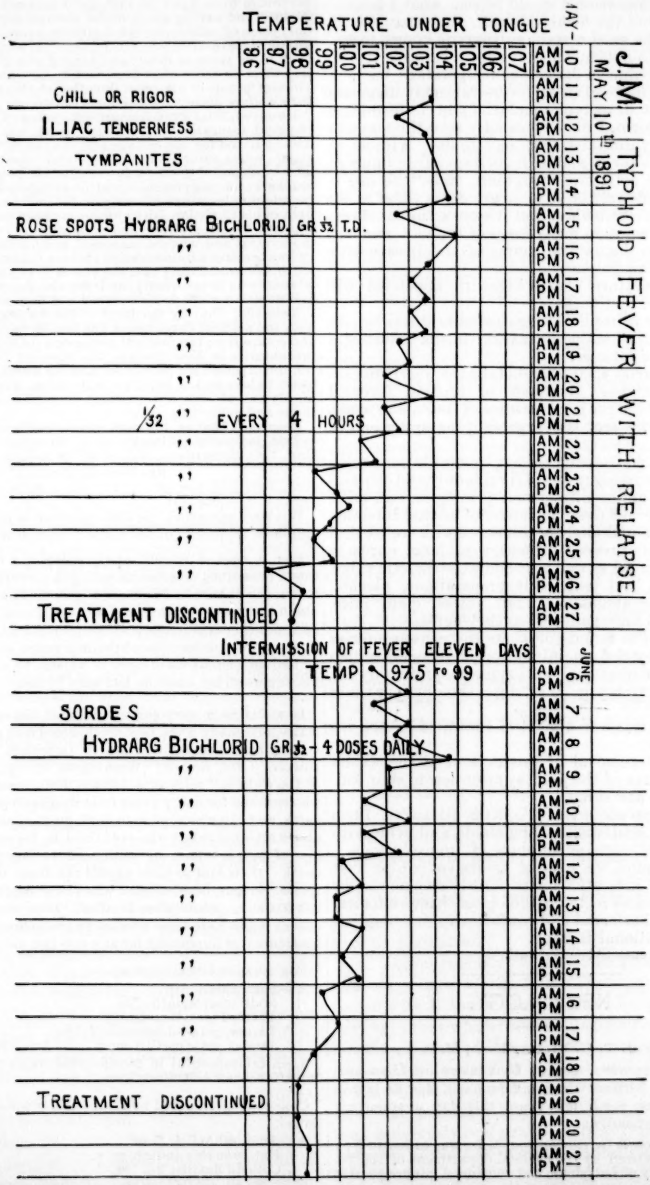
TEMPERATURE UNDER TONGUE
MAY
96 97 98 99 100 101 102 103 104 105 106 107
AM PM 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
J.M. – TYPHOID FEVER WITH RELAPSE
MAY 10th 1891
CHILL OR RIGOR
ILIAC TENDERNESS
TYMPANITES
ROSE SPOTS HYDRARG BICHLORID. GR 1/32 T.D.
" " " " " " "
1/32 " EVERY 4 HOURS
" " " " " "
TREATMENT DISCONTINUED
INTERMISSION OF FEVER ELEVEN DAYS
TEMP 97.5 to 99
JUNE 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
SORDES
HYDRARG BICHLORID GR 1/32 - 4 DOSES DAILY
" " " " " " " " " " " "
TREATMENT DISCONTINUED

have had no accidents, such as ptyalism; nor diarrhœa other than that due to the disease. The remedy is administered in glycerin and water, or simply in a tablet—$\frac{1}{64}$ to $\frac{1}{12}$ gr., being taken three or four times a day.

In this connection I would repeat what I have already said[1] of the bichloride salt, viz.: that it is "in one sense the most certain antipyretic known to me." By this I do not mean that it is a suitable remedy to quickly reduce a dangerous temperature, but that in that indefinite class of fevers variously diagnosed as remittent, or as typho-malarial and conforming to no typical form, I have repeatedly seen the temperature steadily diminish from day to day, without reaccess of the fever and with corresponding improvement in the collateral symptoms, under the use of the bichloride salt in $\frac{1}{24}$ to $\frac{1}{12}$ gr. doses three to six times a day. "I believe that it exerts the same controlling influence in many cases of typhoid and may even shorten the natural course of the disease without risk to the patient."

The temperature charts herewith appended will illustrate this action.

How this action is brought about, unless by the limitation of ptomaine formation in the intestine, I am unable to surmise.

To summarize what I would take the liberty of calling the "rational" treatment of typhoid fever: it should combine the good features of the anti-mycotic, the antipyretic and the expectant or symptomatic plans.

1. It should *sustain the patient*, by ventilation, quiet, and careful nursing; a diet of liquids only, and containing a minimum of nitrogenous principles, e.g., milk, boiled to prevent possible danger of adding infection to infection: and slightly thickened with well-baked wheat flour, to prevent formation of large curds in alimentary canal, as well as to add to its dietetic value. Broths (not beef tea), malt preparations, alcohol, pure water in abundance, fruit juices, clam juice, koumiss and buttermilk when they agree.

2. Attempt to remove or abate the cause so far as practicable by the administration of remedies which tend to favor intestinal anti-zymosis, preferably the bichloride mercury in $\frac{1}{16}$ gr. doses three or four times a day.

3. Symptomatic treatment as indicated in the individual case.

4. Promote removal of products of tissue oxidation, "the ashes of the fire," by attention to skin, kidneys, bowels and lungs.

5. Secure prophylaxis by boiling all soiled linen and bedding, and disinfecting stools and urine with corrosive sublimate, or sulphate of iron solutions.

In my opinion the plan of treatment which best meets all the indications mentioned, recognizes the modern advances in the pathological, bacteriological and chemical sciences and conforms to the requirements of a rational therapy.

65 West Seventh St., Cincinnati.

[1] Cincinnati Lancet-Clinic, Nov. 21, 1891, p. 673.

NECROLOGY.

Prof. T. G. Richardson, M.D.

MEDICAL DEPARTMENT, TULANE UNIVERSITY OF LOUISIANA.
NEW ORLEANS, LOUISIANA, MAY 30, 1892.

The following resolutions were this day unanimously adopted by the faculty:

Whereas, Prof. T. G. Richardson, M.D., was called to New Orleans as a citizen by the medical department of the Tulane University of Louisiana, and continued his connection therewith from April 19, 1858, until severed by death, May 26, 1892, and having given to the medical department thirty-one years of active service, fourteen years as professor of anatomy, seventeen years as professor of surgery, and twenty of these years as dean; and having also given during the last three of retirement from active service the most convincing proofs of his great devotion to the present and future welfare of the medical department.

Resolved, That Prof. Richardson, endowed by nature with physical, mental and moral superiority, was pre-eminently distinguished for his culture and skill as surgeon and physician, which gained for him national reputation and rendered him one of the most instructive and popular of medical teachers; for exceptional scientific attainments, which while broadening his views of nature's God, left him none the less firm in his Christian faith; for his courage and patriotism in war and his benevolence and philanthropy in peace; for his moderation and wisdom in council, and for his zeal and ability in executive administration; for his inflexible devotion to truth, honor and duty; for the strength of his friendships in adversity as in prosperity, and for the fidelity, tenderness and devotion given to his beloved and honored wife.

Resolved, That by the death of this strong, wise and good man the medical department has lost its most valued friend and counsellor; the medical profession its most honored representative in New Orleans: the State of Louisiana a citizen unsurpassed for patriotism and for worth; his friends a heart to love and a hand to help them, and his wife and family one who has left precious memories of a loving, virtuous and noble life.

Resolved, That at the next annual commencement, April 5, 1893, memorial addresses upon the life and services of Prof. T. G. Richardson, M.D., shall be delivered.

STANFORD E. CHAILLE, M.D., Dean.

WITHOUT exception, the first symptom of pregnancy is an increased frequency of the desire to micturate.

FOR a case of exophthalmic goitre in a man, Prof. Da Costa prescribed tinctura aconiti, gtt. j, every three or four hours, the dose to be increased to gtt. v. His diet should be bland and unstimulating, and he should rest in the recumbent position as much as possible. Prof. Da Costa said that it is very rare to have exophthalmic goitre in a man; while he had seen hundreds of cases in women, he could count on his fingers all the cases he had seen in men.

IT WOULD be a very curious page of history if we could learn how many wars, how much bloodshed and how much cruelty have had their origin in imperfect action of the bowels. (*Med. Record.*) Washington Irving, in his "Lives of the Caliphs," tells of a certain Emir named Al Hejaki, who suffered for many years from dyspepsia and abdominal pains, and this wretched man distinguished himself, perhaps above all other rulers who ever lived, by the enormous number of people whom he sentenced to imprisonment and death. He is said to have caused the death of no less than 120,000 persons, besides those who fell in battle, and to have left 50,000 in prison when he died. How much of all this misery might have been averted by the judicious use of mild aperients it is impossible for any one now to tell.

FOR CHRONIC RHEUMATISM.—

℞.—Sodii iodidi, ℥ij.
Sodii bicarbonatis, ℥iv.
Potassii bicarbonatis, ℥j.
Liquor. potassii arsenitis, f ℥jss.
Decoct. sarsaparillæ comp., ad f ℥xx.—M.

S.—A tablespoonful in considerable water three times a day after meals.—*Medical News.*

CORNS are often cured by means of the following application:

℞. Acidi salicylici, ℥ ss.
Ext. cannabis indicæ, gr. x.
Collodii flexilis, ℥ j. M.

Sig. To be applied to the callous part by means of a brush two or three times a day.—*Med. Record.*

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SATURDAY, JUNE 11, 1892.

DIAGNOSIS OF RÖTHELU.

There has always been considerable confusion about the disease known as German measles, or röthelu, or rubella. Its very existence has been denied by some, while its diagnosis is often in doubt. The typical röthelu is practically very mild measles, so far as its clinical manifestations go. The disease commences suddenly and the eruption is apparent in from 12 to 24 hours after the onset of the fever. The eruption itself consists of pale rosy red spots, not unlike those of measles in their general appearance, but never of so deep a color. The impression produced by the eruption is often that of a fading measles. In distribution the spots may appear first upon the face, or first upon the chest, from which localities they spread rapidly to the other portions of the body. Particularly upon the chest are they liable to become confluent, while upon the extremities they are probably always discrete.

The constitutional symptoms are a curious mixture of those found in scarlatina and measles. The eyes are usually involved, but often so slightly so as not to attract attention. Photophobia may be present, without any conjunctival congestion. The bronchial symptoms, so common in measles, may be entirely absent, or present to a greater or less degree, but usually they can be found if looked for. The throat resembles scarlatina. Authorities agree in stating that the throat is involved, the tonsils becoming enlarged, and the mucous membrane of the fauces, soft palate and pharynx being thickened and reddened. Exudation upon the tonsils has even been noticed. It is not surprising therefore to find the glands of the neck enlarged.

Röthelu resembles scarlet fever in the suddenness of its onset, in the time of appearance of the rash, in the color of the rash, and in the involvement of the throat and cervical gland. It resembles measles in the form of the eruption, and in the occurrence of catarrhal symptoms.

It is readily seen therefore that atypical cases may so closely resemble one or the other of these affections as to make the differential diagnosis almost impossible.

In making a diagnosis of this disease in atypical cases, the type of the prevailing epidemic must be considered, and given much weight.

Where the diagnosis lies between scarlatina and röthelu, the slightest evidences of the measle symptoms of röthelu must be sought for. Here even trifling evidences of photophobia, conjunctival congestion, or bronchial cough, will be of service. The extremities must be watched and the appearance of discrete rose red spots in these localities instead of the scarlatinous eruption, especially if the spots appear upon the palms of the hand and the soles of the feet, must be taken as tending toward the diagnosis of röthelu. When the diagnosis lies between röthelu and measles, the scarlatinal symptoms of röthelu are the ones to be sought. In such cases involvement of the throat, and enlargement of the cervical glands are the features which would decide the diagnosis in favor of röthelu.

But after all, it certainly seems as though these differential symptoms are very unimportant, and the great factor of diagnosis is made to depend upon incidents so trifling as to be almost accidental. Unfortunately this general statement is true in many other infectious diseases, and naturally gives rise to the thought that the separating of doubtful cases into definite channels with definite fixed names, may be something of a forcing process, and that possibly the differences between the diseases themselves, may not be so real as the difference in their names indicates.

TRAINING SCHOOLS FOR MALE NURSES.

DR ABRAHAM JACOBI, of New York, approves of the establishment of training schools for male nurses, as well as for the gentler sex. All over the land have been established female departments—in some cities there are too many of them—but there are not enough yet for the men who would take advantage of that kind of instruction.

DR. JACOBI recently addressed the graduating class of male nurses at the Mills Training School, connected with Bellevue Hospital, and he is reported to have said that while the establishment of schools for female nurses had done a good work in the way of raising the standard of hospital and sick-room attendance, the need of carefully trained male nurses was still painfully apparent. The work that has been generously and gratuitously performed by medical men in helping to build up the various schools has, in effect, opened up a new profession—a profession both beneficent and honorable—to men as well

as women. The superiority of nurse-attendance at our hospitals over that which marked the same institutions only a few years ago is one of the most striking proofs that the self-sacrificing labors of the profession have been successful.

The Mills School was begun in 1888, through the liberality of MR. D. O. MILLS. It has gone ahead more rapidly than was anticipated. It is said to have outgrown the accommodations, thought to be ample for ten years to come. The last graduating class numbered nineteen, five of whom were reported to have attained over 90 in the possible 100 in their examination marks. The greater number of these successful candidates were catalogued as coming from New York State and Massachusetts, but some "hailed from" England, Ireland, Wales, Canada and other points. It has been found that whenever an intelligent young man commits himself to the vocation of nursing he becomes thorough and enthusiastic.

SIR WILLIAM GULL'S SEAL: A CONFESSION OF FAITH.—A paragraph in the obituary note, concerning the late Dr. Gull, to be found in the last Guy's Hospital Reports, is interesting as showing an ultimate proposition of a mind given equally to medicine and philosophy.

Sir William laid no little stress upon literary forms of expression. To some he seemed fanciful in his ways of putting things. "A motto which he invented for himself pleased him so much that during the leisure of his last illness he not only had a seal engraved with the words, but he had them printed on a slip of paper as a kind of memento. It was: *Conceptio Dei, Negatio mei, Ratio rei.* That is: All knowledge begins with materialism—with skepticism—with getting at actual bare objective facts, the thing itself—the investigation of phenomena, the linking together of necessary cause and effect; that is, the intellectual part of knowledge; and unless that is the foundation, our morals and religion have no true and firm basis. Next comes ethical knowledge, which consists essentially in self-denial, self-restraint, recognition of the overweening importance which we all give to the individual, and especially to one individual in comparison with the whole. Lastly, as the crown of mental development, the fruit of knowledge, and the result of self-discipline, spiritual truth is discerned."

Or, if we try to put this briefly into English, in vocative phrase, we may have this lesson inculcated, namely: Magnify Fact, Minify Self, Insight of the Divine. This condensation partially, only, reflects the seed-thoughts contained in Dr. Gull's legend, but even this will afford food for reflection.

PRECAUTIONS AGAINST CHOLERA AT EUROPEAN PORTS.—Great precautions are now being taken by the British officials, at all the various exposed points liable to be visited by cholera in 1892. By their request, and those of other European governments, the authorities of Egypt are said to be exercising an unusual vigilance to prevent an incursion of the disease. Their principal activity has been and will be exerted among the Red Sea ports. The route of most immediate danger to the European nations is believed to be by way of Arabia and the Suez canal. Reports from Aden leave no doubt that cholera has been prevalent at points contiguous to that line of travel. The disease is now epidemic in the interior of Arabia, and accounts are not wanting as to the ravages of the pestilence in that region. Hundreds have died daily from that cause; and the fugitives from the stricken districts, arriving at the seaports, state that at the town of Harrar alone, as many as 1,500 persons had died within a fortnight. Another route along which the disease may be expected to travel is that traversing India, Afghanistan and Asiatic Russia. It is reported that cholera is lurking in the latter region. This is a condition that is not publicly known, but has been confirmed by the announcement, made in official circles, that a special commission has been appointed from St. Petersburg to investigate the cholera question in the southeasterly provinces of the Empire. Along this line of traffic, Turkey and southern Russia are the countries primarily endangered by epidemic cholera.

ARMY SURGEON PROMOTED.—Surgeon Fred. C. Ainsworth has been nominated to the Senate for promotion, to be Colonel and Chief of the Record and Pension Office at the War Department.

DR. W. H. BROADBENT.—This eminent London physician and teacher, whose writings are so well known to the American profession, has been appointed Physician in Ordinary to the Prince of Wales, a position made vacant by the death of Sir William Gull.

OLD GLASGOW AND GREATER GLASGOW, UNDER THE CITY OF GLASGOW ACT OF 1891.—(With map.) By James B. Russell, M.D., LL.D., Medical Officer of Health, Sanitary Department, 1892.

The author of this report is sufficiently known to American sanitarians and physicians to make every printed statement of his entirely welcome on this side of the ocean. He is not only a master of his branch of medicine, but he is one of the most entertaining of writers on that branch—preventive medicine.

The author presents a statement of the civic changes that ensued upon the passage of an act for the enlargement of his city. On November 1, 1891, the area of Glasgow was almost doubled, and her population increased nearly one-sixth. A census was taken in 1891, which shows that the population at the present time is not far from 650,000. This is a larger population than is possessed by any of the cities of the United Kingdom, with the single exception of London. Old Glasgow claimed precedence over Liverpool by about 50,000. The extension act has probably secured the rank of Greater Glasgow, in the second place, beyond all likelihood of ever being challenged.

The statistical tables, twenty or more in number, drawn up under the direction of Dr. Russell and printed as an appendix, contain an amount of detailed information that will make this report of perennial value to the students of questions of population, overcrowding and tenant-reform.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting held in Boston, May 31, June 1 and 2, 1892.

TUESDAY, FIRST DAY—MORNING SESSION.

(*Continued from page 724.*)

Malignant disease located in the rectum too low to be removed through an anterior abdominal incision and too high to be extirpated through a perineal one, may be reached from behind, after resection of the coccyx, with or without, as necessity may require, that of the lower portion of the sacrum. This new operation, neither specially difficult nor dangerous, may be done in place of a colotomy, lumbar or inguinal, the latter being to-day more generally preferred. The same objection to such radical treatment as compared with palliative, viz., increase of risk without compensating probability of cure, holds good here as at the pylorus, although in less degree.

In no other part of intestinal surgery has more been done in thought, in experiment and practice than in that dealing with excisions of the bowel in continuity, rendered necessary on account of wounds, growths or gangrene. As the technique of the operations has been improved, the time of performance has been lessened, the risk to life diminished and the range of applicability increased. It is still undetermined whether end to end or lateral anastomosis is to be preferred, of how much value bone plates or rings or other like aids really are, to the patient at least; how far omental grafts may be required or how much additional security they afford.

The solid organs have again and again been brought under surgical treatment on account of wounds, of growths, and of tubercular, parasitic and suppurative diseases.

The kidney, spleen, and even the pancreas has been removed entire, the liver in part. The gall-bladder has been opened and its contents removed (stones, bile and pus), and later sutured and left in place or stitched to the abdominal wall, or cut away altogether. Pancreatic cysts have been at times extirpated, at times drained. These operations have yearly been more frequently performed for more varied causes, by steadily improved methods, and with a marked diminution in the resulting fatality.

Special notice cannot be taken of the new and improved operations upon the uterus and its appendages which have had for their object the relief of the distressing and grave conditions, and as their result, preservation of life and restoration to health in large and steadily increasing proportion of the cases treated.

Of the work done upon the bladder much might well be said; but only a passing reference to the high esteem in which, so justly, the supra-pubic section is now held; to the greatly improved and more successful treatment of tumors, and to the established position that in the period under consideration, litholapaxy has taken as the most generally applicable method of dealing with stone, even in young children, for the relief of whom ten years ago, lithotomy was everywhere regarded as the only operation to be ordinarily thought of.

Though there have been many operations of very considerable extent upon the thoracic wall to secure closure of an empyemic cavity and for the extirpations of tumors, in intra-thoracic surgery but little has been done, and that almost entirely in the evacuation of lung abscesses and the removal of hydatid cysts; the result in the latter class of cases has been remarkably successful. Pneumonotomy for tubercular abscess, according to the report made to the French Congress of Tuberculosis last year, had relieved in about fifty per cent. of the cases and cured in about one-fourth as many, but the number of patients thus far treated has been so small that the figures are of little importance in the consideration of the advisability or otherwise of active interference. It certainly stands to reason that the opening up and draining of the pulmonary tubercular abscess will not be likely to afford other than temporary relief, such pus collection being commonly not solitary, but one of a number in an extensively diseased organ. In the removal of deeply located foreign bodies and tumors, other than those connected with the wall, almost nothing has been attempted, and there are difficulties, anatomical and physiological, in the way of such operations which if in any given case are not insuperable, will probably always tend to make prudent surgeons cautious about entering upon one of them.

Pneumonotomy, experimentally shown to be readily done and attended with no great amount of danger, will doubtless in the future have a place in the treatment of lung injuries, in which already it has been a few times employed according to one report, in fifteen cases with a death rate of less than fifteen per cent. That it will ever be an accepted method of treatment for tuberculous lung may well be questioned.

It is in the surgery of the head and spine that the greatest advances have been made, the largest number of new procedures introduced, the most brilliant operations done; and in these regions more than anywhere else the surgery of to-day is a new surgery, much of it the growth of even fewer years than those included in the lifetime of the Association. More and more constantly are all depressed fractures of the skull being treated actively, and basal fractures, antiseptically. Stronger and stronger is becoming the conviction of surgeons that fractures of the spine associated with evidence of pressure upon or injury of the cord, should not be left to nature, if the general and local symptoms indicate lesions that can be removed or relieved by elevation or extraction of vertebral fragments, or the lessening of tension through opening of the sheath.

It has been proven to be wise to treat bullet wounds of the brain like other punctured wounds of the organ, by exploring, cleansing and draining the track; and occasionally it has been found possible to extract the ball through the wound of entrance or a counter-opening in the skull. The future must determine how far it is wise to go in the way of effecting removal of the bullet, and this must largely depend upon previously ascertained extent of liability to the supervention of epilepsy and mental disturbances weeks, months or years after the lodgment of a ball that at the time of injury did but comparatively little damage, or damage, at least, that was spontaneously recovered from.

Trephining for epilepsy following injury of the skull is no new operation; but of late such treatment has been quite largely employed, not only in cases where there has been an old fracture or contusion, but in those in which, by application of the now well established rules of cerebral localization, it has been possible to determine the place of a meningeal thickening or of a limited chronic encephalitis, or a new growth, solid or cystic, acting as an exciting cause of motor disturbance. Electrical stimulation of the exposed cortex has been made to indicate with exactness a diseased area, the removal of which has been followed by relief temporary or permanent, of the spasm symptoms. The attained perfection of operative procedures has reduced the mortality rate to a very low figure, and even the after presence of a gap in the skull has been prevented by a reimplantation of the removed bone. Unfortunately, in very many cases of recovery from operation, in a few weeks or months, or it may be years, the convulsive seizures will come on again. An established "epileptic habit" is inde-

pendent of the original lesion, and after a certain time, which is a very uncertain one, the patient can no longer be assured that the cause removed, the effect will cease. But for all this, the morbid condition is so disabling, the relief afforded may be so great, the risk run is comparatively so small, that after proper and properly continued yet unavailing medicinal treatment, an epileptic in whom the seat of the disease can be fairly well located should become the subject of operative interference.

Trephining has also been done because of the existence of long standing severe headache; and in cases in which the thorough application of the therapeutic test has proved that the cephalalgia does not depend upon a cause that can be reached and removed by drugs, the operation may certainly with propriety be recommended.

Considerable sections of the skull have been taken away to permit of the expansion of the microcephalic brain; but though improvement in mental condition in certain cases has followed such linear craniotomy, at the present time the operation seems to be of very questionable utility. Before it is to be accepted as an advisable method of treating feeble-minded children, further investigation must be made into the causes of arrested cerebral development, and how far it is productive of and how far consequent upon premature ossification of the cranium.

Insanity of traumatic origin has, in a very large proportion of the few cases surgically treated, been much improved or cured, because, we may believe, of relief of "intra-cranial fluid pressure;" and even general paretics have been thought to have been benefited by trephining.

A few years ago, who would have dreamed of opening up the lateral sinus and removing from it a pyogenic thrombus? Yet it has now been done several times, and with success.

In not a few cases, intra-cranial abscesses have been definitely located and operatively relieved.

But the most brilliant chapter in this history of brain surgery in recent times is that relating to tumors. There is set forth in it not only what has been done, remarkable as it is, but also the unity of medicine and the inter-dependence of its various departments. It is because of the work of the anatomist, the physiologist and the pathologist, the neurologist, that it has been rendered possible to locate with close approximation, to exactness, the position of the neoplasm and its character, without knowledge of which, the skill of the surgeon and the most careful operative technique would be of little or no avail. Even the experimental therapeutist has played a part, because of his demonstrations of the influence of morphia upon the intra-cranial circulation. Though in but a small percentage of cases of tumor has it been, or perhaps can it be, practicable to effect removal because of location or pathological character, yet, when it is so, the gain is enormous, even though the relief afforded be but temporary, as in dealing with certain growths it must be.

Much less operative work has been done upon the spine than upon the head. It has had for its object the evacuation of abscesses, the relief of paralysis, and the removal of tumors pressing upon the cord, and has been in a high degree satisfactory and full of promise.

As never before, the congenital malformations, meningocele, encephalocele and spina bifida have been subjected to surgical treatment, and that with an increasing success, as improvements have been made in the methods of execution. Renewed attempts have been made to permanently get rid of intra-ventricular effusions by tapping and drainage, but the results have not been what might be desired, and that whether the old route to the ventricle has been followed, or the new lateral one.

In the special departments, as in general surgery, these last ten years have been busy ones, and each may justly claim that there has been advance made in the recognition of disease, and improvement in its treatment. But consideration of the work done in them does not concern us here.

Any retrospect, be it never so hurried, of the work of the decade furnishes good warrant for pride in what has been, and high hopes of what is to be. The world over, educated minds and trained hands are busy with the problems of cause, of course, of termination, and seeking out surer, safer and speedier means of relief, therapeutic and operative. Week by week, and month by month, what is accomplished becomes free and common property; everything is proven, and the good held fast. What will be the outcome of all this thinking, and experimenting, and operating, and writing, even in the near future, who would dare to predict? American surgeons have had not a little to do with the work in the past. Fellows of our own Association, some of whom have fallen asleep, have been closely identified with the discovery, the early adoption, and the thorough testing of not a few methods of treatment, and we may expect with confidence that it will be with us hereafter as it has been, and yet more.

As an organized body, certain duties rest upon the Association. Representing the surgery of a country of wide extent, and of very varied climate and soil, of a people of many racial origins, there should be conducted by it a series of collective investigations, which, for example, might show the prevalence and, as far as possible, the more remote determining causes of certain surgical diseases, chief among which is cancer; or the influence of the local conditions, as of altitude, of average temperature and of moisture upon the healing of wounds; or of the relative resisting power to the action of morbific organisms of the descendants of immigrants from different nations; still more, members of the several color races, four of which are to be met with within our boundary lines in numbers large enough to be of value in an investigation of this sort. From our meetings, year by year, should go out to the world reports, as it were, of the surgical state of the nation, and, as far as can be ascertained, the reasons therefor as found in place, in race, in occupation and in social position.

In the personnel of the Association, the years that have gone by have brought much change. It could not but be so. Thirty-three of the Fellows have passed away, leaving to us a memory of worth, of learning and of skill. Since our last meeting, Agnew, and Campbell, and Johnston, and Kinloch, and Peck have rested from their labors. Each, honorable and honored, in his own place and in his own way, aided humanity and advanced medicine, and each will long be held by us in kind remembrance.

Dr. John B. Roberts, of Philadelphia, read a paper on

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE LOWER END OF THE HUMERUS.

The following are the conclusions arrived at:

Humerus.—1. In the treatment of fractures of the lower end of the humerus, the divergent angle between the axes of the arm and forearm must be preserved; and hence, dressings which interfere with the normal difference in level of the radius and ulna are not permissible.

2. Fractures of the lower end of the humerus of ordinary severity are, as a rule, more successfully treated in the extended than in the flexed position.

3. Because the "carrying function" is less liable to be impaired.

4. Passive motion at an early date is harmful, and should be deferred until union has occurred and the dressings have been finally removed.

5. Good results as to anatomical conformation and as to

motion are generally to be expected, and can usually be obtained.

6. Recent fractures in which satisfactory coaptation is not obtainable under anæsthesia may with propriety be subjected to exploratory aseptic incisions. Old fractures, in which deformity and impairment of function are marked, may, within certain limitations, be subjected to refracture or osteotomy for the relief of these conditions.

Discussion.

Dr. John E. Owens, Chicago, said that he had never treated fractures of the lower end of the humerus in the extended position. The treatment of such fractures in the extended position seems to recommend itself for the following reasons: In the extended position there is no room in the olecranon fossa for neoplastic deposits; the great superabundance of soft tissues in front of the joint when the arm is flexed marks the symptoms; the soft tissues in front of the arm present more opportunity for laceration and cicatricial contraction; in the extended position no traction is made upon the vessels and nerves; that the natural angularity between the arm and forearm is preserved.

The speaker had experienced considerable timidity in the treatment of these fractures at the elbow on account of the impaired mobility which often results. The natural position of the arm in relaxation is that of flexion. He had treated these fractures in the flexed position. The extended position may cause tilting forward of the upper end of the lower fragment, or its rotation forwards, or hyper-extension may be caused.

Passive motion is resorted to in four or five weeks to an extent short of causing suffering. The material used for the splint is plaster of Paris. He had treated many of these fractures in cases where the injury resulted from railroad accidents, where suits for damages are common, but he knew of no case where the question of defective treatment entered successfully.

Dr. John H. Packard, of Philadelphia, remarked that it was often difficult to tell the exact character of a fracture at the elbow joint even under the most favorable opportunities for examination. He thought that the carrying function was rarely perfectly maintained under any plan of treatment. After fracture running into the joint there is liability to the formation of adhesive lymph. He thought that passive motion should be resorted to before the organization of the adhesive lymph. He advocated treatment of these fractures in the flexed position and described splint of sheet zinc which he had used with satisfaction.

Dr. Charles B. Porter, of Boston, thought that the treatment advocated in the paper violated one of the first principles in the treatment of fracture, that is to place the muscles in a state of relaxation. In the extended position the muscles which should be relaxed are not at rest. He had never seen any statistics in regard to the results of treatment of fracture in extended position, in comparison with those in the flexed position. Until these are forthcoming, the profession will be unwilling to accept this as the best method of treatment. He therefore gave his adhesion to the treatment of these fractures in flexed position rather than extended position. Before the fracture is dressed, it should be adjusted under ether and then not looked at for two or three days, and if found in position not again dressed for a week or ten days. In old fractures where there is sufficient deformity to demand osteotomy, resection of the elbow is better and by it a very useful arm may be secured.

Dr. J. Ford Thompson, Washington, D. C., did not approve of the plan of treating fractures of the lower end of the humerus in a right angle. In his treatment he adopted that plan of treatment which permitted the axes of the fragments being brought into relation with each other. This he had found to be the extended position. In two cases of compound fracture he had been unable to bring the fragments into line until the forearm was extended. The difficulty about the straight position is that it is disagreeable and uncomfortable to the patient. He considered plaster of Paris to be the best dressing.

Dr. A. G. Gerster, New York, held that the bad results which are often seen after fractures at the lower end of the humerus are not necessarily due to the method of treatment. In several cases where he had had opportunity to examine the joint he had found that the trouble was due to the throwing out of callus at points where the callus has been stripped off. Bad results are often due to insufficient examination. Anæsthesia is not employed and the dislocation which may accompany the fracture is not recognized. In the treatment of the fracture after replacing the fragments, such methods must be employed as will hold them in place. The flexed or extended position must be employed as necessary. He had found that as a rule the fragments were best held in place by treatment in extension. He does not employ passive motion and considers it useless and often harmful.

Dr. Stephen H. Weeks, of Portland, Me., said that it was his custom to treat supra-condyloid fractures of the humerus in a position of flexion, but he was satisfied that satisfactory results are secured by different methods of treatment.

Dr. T. J. Dunott, of Harrisburg, thought that the manner in which the injury had been received had much to do with the ultimate result. He was inclined to think that the flexed position would give a good result in many of these fractures associated with severe injuries. He prefers to treat the arm in such a position that the radius and ulna are parallel. In many cases where great injury is done to the soft parts, no splint can be applied, and under such circumstances the arm should be laid on a pillow and lead water and laudanum applied for some days, until the tumefaction gives away. If necessary, incision into the tense tissues is made.

Dr. W. H. Carmalt, of New Haven, said that in some cases the ulna acted as a wedge between the two fragments at the lower end of the humerus, forcing them apart, and reported a case which he had recently treated in the flexed position, using extension by means of weights, and obtained a satisfactory result.

Dr. J. Collins Warren, of Boston, had observed the difficulty mentioned by Dr. Carmalt, but had attributed it to drawing forward of the condyles rather than to sinking in of the ulna. Dr. Bigelow had laid down the excellent rule of going through the movements for reducing a dislocation at the elbow in these cases. In this way the danger of overlooking a dislocation is avoided, and if there is simply a fracture, the manipulations mould the bone into place. The flexed position with an internal angular splint seems to be the best method.

AFTERNOON SESSION.

Dr. John B. Roberts, of Philadelphia, read a paper entitled:

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE BASE OF THE RADIUS.

The following conclusions were presented:

RADIUS:—1. Fractures of the lower end of the radius vary comparatively little in their general characteristics, because but one form is usual.

2. Muscular action has little, or nothing, to do with producing or maintaining the deformity.

3. Immediate reduction of the fragments is the essential of treatment.

4. Many of the splints devised for the treatment of this fracture have been constructed in ignorance of the pathology of the condition.

5. The ordinary fracture of the lower end of the radius usually requires no splint and should be dressed with a wristlet of adhesive plaster or bandage.

6. When a splint is required, a narrow, short, dorsal splint, fixing the wrist, is all that is necessary.

7. The method of dressing here advocated is the best, because it annoys the patient as little as possible by avoiding cumbrous appliances, and permits free voluntary movements of all the finger-joints.

8. Passive motion is unnecessary until union has occurred and the dressings have been finally removed.

9. Good use of the wrist and fingers is early obtained, and the anatomical conformation is restored as well as, and perhaps better than, by other more complicated dressings.

10. Old fractures, which have been improperly treated by omission of immediate reduction, may with considerable success be subjected to refracture at the end of six or more weeks. At later periods readjustment may be possible only by osteotomy, which is a legitimate means of treatment.

Dr. John H. Packard, Philadelphia, had in 1879 read a paper on this subject before the American Medical Association, in which he took the ground that the great difficulty in many of these cases arose from non-reduction. If the frac-

ture of the lower end of the radius, commonly known as Colles fracture, is once reduced there is little tendency to reproduction of the deformity. Many physicians think that all that is necessary is to apply the proper dressing. The most important step in the treatment is reduction. He did not agree with the fifth proposition that no splint is required. He employs an anterior splint padded to fit the curve of the radius and reaching to the ball of the thumb. The patient can use the fingers freely. In ordinary cases who will take proper care of the arm, this simple splint suffices.

Dr. Chas. B. Porter, Boston, emphasized the necessity for complete anæsthesia, then complete reduction and breaking up of the impaction and then the application of a posterior and an anterior splint; after a week or ten days, he allows motion of the fingers and in two weeks motion at the unit. He considers passive motion unnecessary except in old people where there is a rheumatic or gouty tendency.

Dr. J. Ford Thompson, Washington, dwelt upon the disastrous results that often followed failure to reduce the displacement, or the use of improper dressings. After reduction of the fragments he applys an anterior and posterior splint secured lightly to the arm. He had not found it necessary as a rule to use ether to accomplish reduction. In cases where there was severe pain following the application of the ordinary splint, instant relief followed the application of a plaster splint, the hand being carried well to the ulna side. In several cases where the hands were useless from the inflammation of the sheathes of the tendons he had tried to break these up under repeated administrations of anæsthetics but the results had not been very marked.

Dr. Joseph Ransohoff, of Cincinnati, said that in some cases the reduction could not be effected so readily as had been described. He had had three or four cases in which extension would not overcome the difficulty and in such cases hyper-extension has been resorted to. In the treatment he is partial to Levi's splint. After a week or ten days passive motion is resorted to.

Dr. Chas. B. Nancrede, of Ann Arbor, called attention to the fact that a certain amount of the bone tissue at the seat of fracture was destroyed so that some deformity will necessarily follow. Reduction is the most important measure in the treatment. The fragments are then to be held in place by suitable apparatus.

John Homans, M.D., of Boston, read a paper entitled

FIBROID TUMORS OF THE UTERUS.

Fibroid tumors were defined as aggregations of normal uterine tissues in abnormal situations and masses. They may cause symmetrical or more or less one-sided enlargement; they may be in the walls of the uterus or protrude towards its outside or towards its inner cavity; they may be incorporated with the uterus or connected with it by a broad attachment or by a pedicle, or they may be entirely separated from it and get their nourishment from the vessels of the omentum or mesentery. They may be dense, œdematous, or filled with lymph spaces, or they may in very rare instances be fibro-cystic. It is probable that a certain number of the tumors which have been described as fibro-cystic belong to the class of fibroids with dilated lymph spaces. True fibro-cysts are very rare.

In size these tumors vary from that of a mere dot to masses weighing fifty or more pounds. Their growth is slow. They are of common occurrence. In the past fifteen years the author had seen about five hundred and twenty fibroid tumors.

Operations to relieve women with fibroid tumors are rarely necessary. The writer had operated on only sixty of these five hundred and twenty cases, eleven per cent. The conditions which should guide us in recommending removal of the tumors are, when they threaten life by hæmorrhage; when they are unbearable from their weight or the inconvenience they cause, when in a young woman they cause distress and shame from the alteration in her figure, when they cause much pain, when they cause serious obstruction of the circulation, or interfere with the action of the digestive or elliminative organs; when they cause obstruction of the bowels or when their pedicles have become twisted and sometimes the whole uterus becomes twisted on its axis.

Death by hæmorrhage is rare. The speaker knew of only three instances. In fibroids complicating pregnancy, the tumor may threaten to render delivery impossible but nature will generally get the obstruction out of the way if you give her a chance.

The solid fibroid tumors rarely have adhesions and are removed without much difficulty. Of fibro-cystic tumors the speaker had met with only eight in the 520 cases. None of these were successfully removed. One woman recovered from an incomplete operation. The others all died. The author had reported an extraordinary case of twisting of the uterus as the pedicle of a large fibroid tumor. The uterus was twisted one and a half times on its axis. The case was fatal, no operation having been done.

The natural history of ninety per cent. of fibroid tomors is to remain stationary after reaching a certain size, and after the menopause to become cretaceous and atrophied. About ten per cent. require removal. The average age at which the speaker had operated was 39 years.

Treatment by ergot alone is usually ineffective; combined with curetting it helps to stop hæmorrhage. Treatment by high doses of electricity *a la* Apostoli, sometimes stops hæmorrhage, almost always relieves pain and gives strength, but rarely diminishes the size of the tumor. In four cases the speaker had practiced removal of the ovaries for the cure of fibroid tumors. In one woman 44 years old, the tumor disappeared in a few weeks and menstruation at once ceased. In another 33 years old, the catamenia gradually ceased after three years and the tumor remained about the same. In another 34 years old there was irregularly recurrent bleeding for eight months after operation. A fourth case 36 years old was not all relieved by the operation. He was inclined to regard this method as unreliable.

Curetting often cures the hæmorrhage completely. This is followed by the application of tincture of iodine. The surgical treatment at the present time is almost wholly by removal of the tumor with or without the uterus. If the tumor has been protruded into the cavity of the uterus it should be enucleated and removed under careful antisepsis. Other tumors requiring removal must be removed by abdominal section. The operation may be finished in several ways. Sometimes the wound in the uterus can be closed by stitches or the pedicle may be treated by the extra peritoneal method after constriction with the serre-hœud. Sometimes the stump is simply tied as is the pedicle of an ovarian tumor and then dropped. Sometimes the stump is turned into the vagina. All the different methods depend for their fundamental success on asepsis and on securing the vessels of the broad ligament, no matter in what way the pedicle or neck or body of the uterus is ultimately disposed of.

The condition of most patients from whom fibroid tumors have been removed is very comfortable. Some suffer from "hot flashes". Others grow extremely fat. A certain proportion, particularly those in whom the pedicle has been treated extra peritoneally, suffer from ventral hernia.

Sometimes the bladder is cut off by the wire ecraseur, but in the only case he had seen, the bladder healed in a few weeks by keeping it drained and during the ten years that have elapsed since the operation, the bladder has been perfectly normal. The length of the incision does not complicate the operation provided there are no adhesions. Very rarely, insanity follows the removal of a fibroid, as it does other surgical operations. The author had never seen this complication follow hysterectomy. He has seen two cases of tetanus in the cases of other operators, but had had no case himself after hysterectomy. He had had one case follow ovariotomy. He invariably sees that patients who have recovered from abdominal hysterectomy are fitted with a firm abdominal supporter and impresses upon them the necessity of being careful about carrying heavy loads or straining themselves.

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Discussion.

Dr. A. Vander Veer, Albany, said that in looking over his notes, he had found that the age from 38 to 48 years has been most prolific in the development of these tumors. The hæmorrhage which is usually the symptom that attracts the attention of the patient is dependent not so much upon the size of the tumor as upon its location. The hope that after the menopause is reached the fibroid will subside is not always verified. In some cases, the tumor seems to take on a more active growth at that time. As to treatment, curetting with packing with iodoform gauze will often stop bleeding. Where this fails, in small fibroids, oöphorectomy invariably cures except in soft myomas. The danger in treatment rests with the size of the tumor. It is the large ones that give the mortality after operation.

Dr. J. Ewing Mears, Philadelphia, held that where the only reason for the removal of the tumor was the large size of the abdomen, giving rise to unpleasant remarks, we should not be guided by the patient's desire that the operation should be done. He related the case of an unmarried woman, who desired the growth removed on account of the distention of the abdomen which it produced. He refused and she passed into the hands of another practitioner, who did operate, the patient dying five hours later. Dr. Mears divided these cases requiring operation into two classes. We are justified in operating where the hæmorrhage endangers life. Second, we are justified in operating when the pressure symptoms are such as to make life unbearable. There are, however, many cases in which, under palliative treatment, life may be prolonged, the patient rendered comfortable and be able to enjoy life. He had found electricity palliative, but not curative. The tumor is sometimes reduced in size.

Dr. George W. Gay, Boston, spoke of the treatment of fibro-cystic tumors, and referred to the use of tapping. He reported one case in which he began tapping in 1879, repeating it every two or three weeks for four years; ninety tappings in all were made. The patient is now in good health, with a large abdomen, but has not been tapped for years. Other similar cases were reported.

Dr. Robert Abbe, New York, referred to the value of the Trendelenburg posture and the early securing of the arterial supply of the uterus in these operations. He was rather surprised at Dr. Homan's assurance that death from hæmorrhage was rare. He had thought the contrary. It is the symptom that frightens the patient and alarms the surgeon. He had had fair success with electricity and would advise it in many cases. The tumor will grow but the hæmorrhage will cease.

Dr. John Homans, Boston, said that the use of strong currents of electricity to the interior of the uterus caused some change to the mucous membrane, checking bleeding, but it did not prevent conception. It was his custom to advise patients with fibroid tumors not to marry. Cases bearing upon this point were related.

The Association then adjourned until Wednesday morning.

WEDNESDAY.

The morning session was given up to a visit to the Massachusetts General Hospital, where a number of interesting cases were shown and the methods of work demonstrated.

AFTERNOON SESSION.

Dr. Dandridge, of Cincinnati, read a paper on

THE SURGERY OF THE TONGUE.

The paper was confined to a consideration of operative procedures in malignant disease. Our knowledge of lingual cancer was first reviewed. As a rule it appears in the form of epithelioma. It runs its course in about a year and a half. In many cases it develops from an indifferent lesion which has been subjected to continued irritation. Neighboring glands are usually affected, and this may occur within three months, or not for six or nine months after the appearance of the disease. In ulcerated epithelioma the diagnosis will most often hesitate between that and tubercular and syphilitic ulcer.

The history of operations of cancer of tongue was then considered and the author expressed his agreement with the following propositions laid down by Treves:

1. The organ should be removed by cutting with the scissors or knife.

2. The removal should, as a general rule, be effected through the mouth.

3. Every means should be taken to reduce the hæmorrhage to a minimum.

4. When the floor of the mouth is involved, or the glands extensively involved, the incision should be carried out through the neck.

The following methods were then described in detail: Whitehead's, Mordant Baker's, Kocher's and Volkmann's.

Whitehead's: In this operation a gag is used, care being taken to avoid pressing back the jaw and impeding respiration. The patient is in a sitting position. A ligature is passed through the anterior part of the tongue and scissors are used for the sections. If the frænum and the anterior pillars of the fauces are completely divided, the tongue can be drawn freely from the mouth. The organ is then separated by free cuts with the scissors until the main artery is reached. This is seized with forceps before division. Before completely severing the tongue, it is desirable to pass a loop of silk through the glosso epyglotedian fold, in case it may become necessary to make traction on the posterior floor of the mouth. The parts are then rendered as aseptic as possible by swabbing over with 1–1000 biniodide of mercury solution and painted with iodoform styptic solution—Friar's balsam in which the spirits are substituted by a concentrated solution of iodoform in ether, one part in ten of turpentine having been added to the ether. This varnish is repeated daily. The patient is not kept in bed, but encouraged to go into the open air. Whitehead has reported 104 cases of total removal of the tongue by this method with 20 deaths or 19.2 per cent. Of 61 patients 15 survived the operation one year; 4, two years; 2, three years; 4, five years, and 1, six years.

Baker's operation: In this operation two threads are passed half an inch from the median line of the tongue on each side. The attachments of the tongue on the side are divided with scissors, keeping close to the lower jaw. The mucous membrane is next divided along the median line and the two halves of the tongue separated by the finger. The diseased half of the tongue is then removed with the ecraseur. After this, glands should be searched for and removed either from the floor of the mouth or by external incision.

Kocher's operation has been commended in cases in which the floor of the mouth and the sub-maxillary glands are involved, but is too serious an operation for cases where the disease is confined to the tongue. Tracheotomy is first done and the fauces plugged. An incision is then made along the anterior border of the sterno-mastoid muscle. From the first, an incision is made from the middle of the sterno-mastoid muscle to the hyoid bone and along the anterior border of the digastric to the jaw. The flap is turned up and the facial artery and vein and the lingual artery tied. The sub-maxillary fossa is then completely cleaned out. The attachments of the tongue are now divided and it is drawn through the opening and removed either in part or in whole by scissors or galvano-cautery. If the whole tongue is removed the lingual artery of the opposite side must be ligated through a separate incision. The tracheotomy tube is allowed to remain and the wound is kept packed with gauze soaked in carbolic acid solution. This is changed twice a day, at which times food is given. In fourteen cases thus operated on there was one death.

Volkmann's method has been attended with extraordinary success, there having been only two deaths in ninety-one operations. The patient is seated in a chair. If the tongue can be brought forward, a resection is made with knife or scissors and the mucus membrane brought together, or if a strip of healthy tongue is left it is turned around so as to

make a short, broad organ. If the disease is too extensive to admit of this method a traction thread is passed through the tongue and it is drawn forward. The canine or first molar tooth is extracted, and the incision made downward from the corner of the mouth and the lower jaw divided. The portions of the bone are separated and the attachments of the tongue divided. The cut surfaces are covered with mucous membrane and the bone wired. A drainage tube is placed in the tonsillar fossa and brought out at the lower portion of the incision.

In the after treatment of removal of the tongue for cancer, the three great factors are, 1. Let the patient be well fed. 2. Let all discharges escape from the mouth. 3. Keep the cavity of the mouth sweet and clean.

The author next referred to the palliative treatment to be employed in cases where operation was not indicated or where the patient refused surgical interference. For the pain a powder consisting of iodoform one grain, morphine one-sixth to one-half a grain, borax three grains, has been recommended applied directly to the painful spot. Cocaine has naturally been resorted to either by application to the surface or by hypodermic injection, but there is danger of the establishment of the cocaine habit. The excision of a portion of the lingual nerve was highly recommended, but the relief thus afforded may be only temporary. For the relief of salivation and fetor various antiseptic mouth washes may be employed. Where there is difficulty in swallowing on account of the pain, relief may be afforded by painting the surface freely with cocaine just before the administration of food, or a soft rubber tube may be passed into the œsophagus.

The following conclusions were considered justified:

1. Sufficient experience has been accumulated to show that the removal of cancer of the tongue prolongs life and adds to the comfort of the patient and further affords a reasonable hope of permanent cure.

2. All operations should be preceded by an effort to secure thorough disinfection of the mouth and teeth.

3. In the treatment of continued ulcers and sores on the tongue, caustics are to be avoided and all sources of irritation removed.

4. Persistent sores on the tongue, should be freely removed by knife or scissors if they resist treatment.

5. When the disease is confined to the tongue, Whitehead's operation should be employed for its removal.

6. In this operation, the advantage of preliminary ligation of the lingual artery is not definitely settled, but the weight of authority is against its necessity.

7. The advantage of leaving one half the tongue in unilateral disease, must be considered undetermined, but the weight of positive experience is in its favor. In splitting the tongue into lateral halves, Baker's method of tearing through the raphe should always be employed.

8. A preliminary tracheotomy adds an unnecessary element of danger in the removal of the tongue in ordinary cases.

9. When the floor of the mouth has become involved or the glands are enlarged Kocher's operation should be employed, omitting the spray and preliminary tracheotomy.

10. Removal of the glands by a separate incision after the removal of the tongue, must be considered insufficient.

11. Volkmann's method still rests on individual experience. Its just value can not be determined until it has been subjected to trial by a number of surgeons.

12. Thorough and complete removal should be the aim of all operations, whether for limited or extensive disease.

13. By whatever method the tongue is removed, the patient should be up and out of bed at the earliest possible moment, and should be generously fed.

Discussion.

Dr. D. W. Cheever, of Boston, referred to the question of diagnosis of ulcers of the tongue. In the first place we have dyspeptic ulcers. These appear in successive crops. They are not indurated and can be made to heal by simple treatment. Secondly we have the syphilitic ulcers. Previous history is at times of service. In doubtful cases two weeks of anti-syphilitic treatment should be employed. Third, lupus or tubercular disease; this is not so common as cancer. The test of the examination for the bacillus is not always successful. The tubercular ulcers form and reform; some heal and leave scars. Cancer does not heal, but goes on extending. In lupus the sub-lingual and sub-maxillary glands are early infected. True cancer is almost always at the side of the tongue; the infection of the glands is usually speedy.

While he advised removal of enlarged glands he did not think that the neck should be treated as the axillæ. As to duration, he thought that malignant affections of the mucous membrane are more speedy in their recurrence than malignant affections in the skin and glandular structures. In cancer of the tongue the disease, as a rule, recurs in four to six months. In simple cancer of the tongue without gland involvement, preliminary tracheotomy is not needed. He operates with the patient in the sitting position and not thoroughly etherized. He had never tied the lingual artery for cancer. The partial amputation of the tongue where the disease is limited, seems to have been as successful as the total removal. Recurrence is almost always in the glands and rarely in the stump. Reference was also made to the remarkable recovery of the power of talking in cases where the tongue was completely removed.

Dr. L. McLane Tiffany, Baltimore, said that in considering the operative interference we should distinguish between cases where the disease involved the anterior portion of the tongue, and where the disease has begun more or less posteriorly and there is glandular involvement. In the latter case he prefers division of the lower jaw, either at the symphysis or at the side. He thought it wise to remove the glands beneath the tongue even if not enlarged. In this way we get rid of one of the routes of systemic infection. Where the posterior portion of the tongue is involved, permanent recovery is rare; where the glands are involved it is still more rare. He had obtained his best results where he had divided the jaw and secured drainage from below. The incision is not closed and ample opportunity for drainage is provided. The operation is done with the patient on the side, and the head near the edge of the table, full anæsthesia with chloroform being employed. Where the tongue is excised for tubercular ulceration, the ulcer rarely recurs although the general tubercular disease may progress.

(To be concluded.)

MISCELLANY.

TWENTY-SECOND ANNIVERSARY of Mitchell District Medical Society will be held at West Baden Springs, Ind., July 7 and 8, 1892. Gentlemen who will read papers before the Society are requested to notify the secretary.

GEO. W. BURTON.

BRITISH MEDICAL ASSOCIATION.—SIXTIETH ANNUAL MEETING.—The sixtieth annual meeting of the British Medical Association will be held at Nottingham on Tuesday, Wednesday, Thursday and Friday, July 26, 27, 28 and 29, 1892.

President, John Roberts Thomson, M.D., F.R.C.P., Consulting Physician Royal Victoria Hospital, Bournemouth; President-elect, Joseph White, F.R.C.S., Edin., Consulting Surgeon Nottingham General Hospital; President of the Council, W. Withers Moore, M.D., F.R.C.P., J.P., Consulting Physician Sussex County Hospital; Treasurer, Henry Trentham Butlin, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, E.C.

An Address in Medicine will be delivered by James Cuming, M.D., Professor of Theory and Practice of Medicine, Queen's College, Belfast.

An Address in Surgery will be delivered by W. H. Hingston, M.D., Montreal, Canada, Surgeon-in-Chief, Hotel Dieu, Montreal, Professor of Clinical Surgery, Laval University.

An Address in Bacteriology will be delivered by German Sims Woodhead, M.D., F.R.C.P., F.R.S.E., Director Research Laboratory Conjoint Board of Royal College of Physicians and Royal College of Surgeons, England.